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ABSTRACT

The papers in this collection discuss the challenges and opportunities inherent in the fundamental reforms under way in the higher education sector in China. The chapters are: (1) "Introduction: Changing Patterns in University Management" (Thomas J. Alexander); (2) "What Is Facing Chinese Higher Education in the New Century?" (Gu Mingyuan); (3) "Academic Freedom and Academic Duty in Chinese Universities" (Shen Hong); (4) "University Autonomy in China-History, Present Situation and Perspective" (Li Xiaoping); (5) "The Theory of Transaction Cost and Choosing Appropriate Reform Models for the Higher Education Administrative System in China" (Yan Fengiao); (6) "Diversification of Sources of Funding and Innovation in Management Methods in Chinese Universities" (Qi Yeguo and Chen Yukan); (7) "The Situation of Education Funds in China and the Establishment of a Tuition Collection System for Graduate Students" (Shen Yan and Du Zhiguo); (8) "Housing Management in China's Colleges and Universities" (Zhang Qiming); (9) "How University Research and Industry Should Co-operate and Promote National Economy" (Rong Yonglin); (10) "An Analysis of Innovation in Chinese Higher Education Adaptable to the New Environment" (Yuan Bentao); (11) "Internationalisation: A Challenge for China's Higher Education" (Zhang Xiaoming and Xu Hatiao); (12) "Modern Education from a Strategic Viewpoint and Optimisation of the Assessment System" (Dai Xiaoli); and (13) "The Analysis of College and University Employment Costs in China: A Case Study of a Major Chinese University" (Wang Sunyu and Wang Yan). Each paper contains references. (SLD)

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Current Issues in Chinese Higher Education

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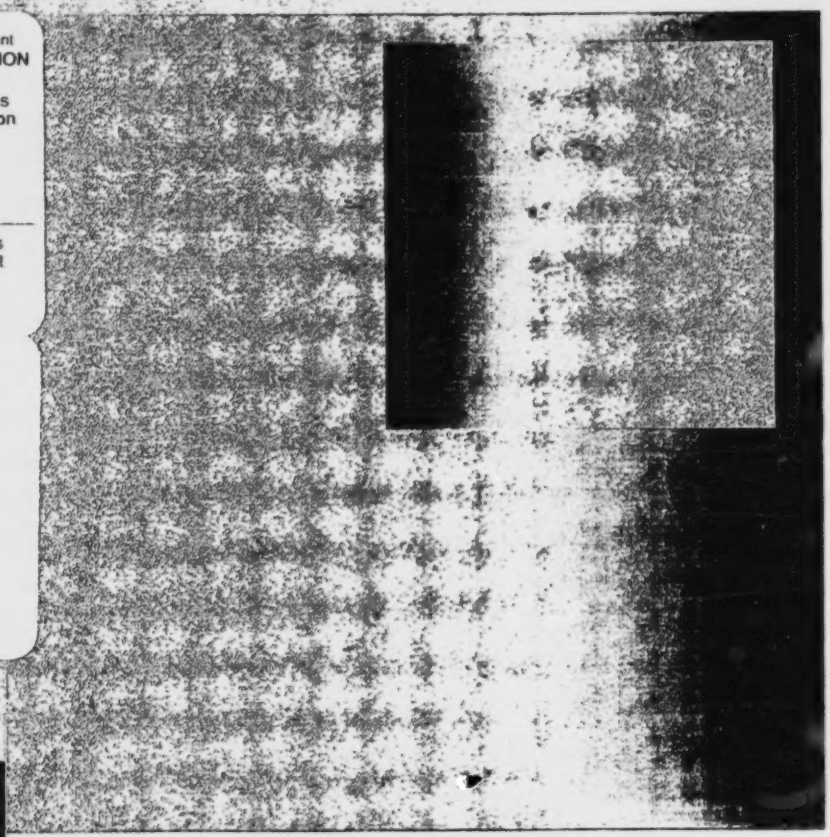

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INSTITUTIONAL MANAGEMENT IN HIGHER EDUCATION

Current Issues in Chinese Higher Education

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The main objectives of the Programme are as follows:

- to promote, through research, training and information exchange, greater professionalism in the management of institutions of higher education; and
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FOREWORD

The seminar at Tsinghua University, held in April 2000, extended the co-operation between the OECD's Programme on Institutional Management in Higher Education (IMHE) and the David C. Lam Institute for East-West Studies (LEWI) in Hong Kong. In November 1996 a successful seminar co-sponsored by the IMHE and LEWI was held at the Baptist University of Hong Kong on the "Institutional Strategies for Internationalisation of Higher Education" which led to a publication under the title *Internationalisation of Higher Education in Asia Pacific Countries* (EAIE, 1997). A second seminar was held at the same university in November 1998, this time on "Academic Consortia". The combination of the opportunity to co-operate with one of the two premier Chinese universities, as well as international interest in the fundamental reforms taking place in the Chinese higher education system, were both major factors in deciding to hold a meeting hosted by Tsinghua University in Beijing. The meeting brought together 80 participants from no less than 13 countries on the theme "Changing Patterns in University Management".

The IMHE Programme, with Richard Yelland and Jacqueline Smith, the LEWI Institute with Wendy Chan and Jane Cheung, and the Institute of Education Research of Tsinghua University, with Jiang Chongkuo and Wang Xiaoyang co-operated actively to organise the seminar. The wealth of material presented at the seminar prompted the IMHE Directing Group and its Chairman, Peter West, to recommend that a selection of the papers about current issues in Chinese higher education appear in print.

This book is published on the responsibility of the Secretary-General.

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INTRODUCTION:
CHANGING PATTERNS IN UNIVERSITY MANAGEMENT

Tom J. Alexander
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The seminar at Tsinghua University, held in April 2000, extended the co-operation between the OECD's Programme on Institutional Management in Higher Education (IMHE) and the David C. Lam Institute for East-West Studies (LEWI). In November 1996 a successful seminar co-sponsored by the IMHE and LEWI was held at the Baptist University of Hong Kong on the "Institutional Strategies for Internationalisation of Higher Education" which led to a publication under the title *Internationalisation of Higher Education in Asia Pacific Countries* (EAIE, 1997). A second seminar was held at the same university in November 1998, this time on "Academic Consortia". The combination of the opportunity to co-operate with one of the two premier Chinese universities, as well as international interest in the fundamental reforms taking place in the Chinese higher education system, were both major factors in deciding to hold a meeting at Tsinghua University. The meeting brought together participants from no less than 13 countries on the theme "Changing Patterns in University Management".

The seminar was held as major reforms in the Chinese tertiary system were under way. Against the background of wider economic reforms, it has only really been in the last two years that the Chinese tertiary sector has received the sort of attention that it clearly deserves. A highly segmented system with over one thousand universities, and a growing number of private institutions, has operated under a very complex set of arrangements of control at the national and provincial levels. A host of different supervising authorities have been responsible for overseeing different parts of the sector – some of the national universities have been the responsibility of the Ministry of Education; others of

the various specialised ministries. The provincial universities and institutions respond to provincial governments, though receiving some, but not all, funding from the central government. Reforms now under way, particularly within the framework of the government's 211 Project which aims at strengthening about 100 institutions and key disciplines as a national priority, have seen many national universities transferred to the provincial authorities, as well as undergoing restructuring, often involving merging with other institutions.

Thus, more coherence is being introduced into the system and important goals have been set to expand participation very substantially as China seeks to respond to modern labour market needs. Progress towards membership of the World Trade Organisation, in particular, will open up the prospect of greater international competition in China's markets and the urgency of developing the skills and creativity needed for success. The government has set the target of boosting net enrolment by 50% by the year 2005, bringing participation rates up to 15%. It is also intended that the number of post-graduate students increases by 30% in the same period. These are important responses to ensure that the Chinese tertiary system faces up squarely to the challenges of the "new" skills that China will need in the 21st century as the country moves towards its declared aim of being a middle-income country by 2020. Building the stock of human capital that will make that possible is a momentous undertaking.

This volume brings together a few of the sixty, or so, papers presented at the seminar. It will provide a distinct flavour of the challenges and opportunities inherent in the very fundamental reforms under way in the higher education sector in China, as seen through the eyes of some of those directly involved, as well as their aspirations and preoccupations. Many of the themes that flow through these contributions will be familiar to a broader readership, while others reflect some of the particular concerns that are seen to be facing the Chinese system and culture. The papers were presented in both English and Chinese (often by doctoral students) and led to vigorous debate throughout the conference. I would like to use this foreword to look briefly at two interlinked themes – institutional autonomy and funding.

As China's "open door" economic policies result in remarkably high and sustained levels of growth, with average GDP of the order of 10% over the twenty years 1978-97, the demands on the skills and knowledge of its population have fundamentally changed with inevitable pressure on the education system. In the opening chapter, Gu Mingyuan lays out clearly the challenges facing the current shift from an elite to a "public-oriented" higher education system that will be able to foster the creativity essential a modern knowledge-based society. The need for attitudes to change to allow this to

happen effectively is echoed in several contributions, all the more so, in the intense ongoing debate on academic autonomy and its implications for the government, the institutions, faculty members and students.

While acknowledging the importance of the reforms of the past two decades, Shen Hong argues that although autonomy within the Chinese academic world has increased – though less so for students – ever-increasing demands are being made for greater autonomy. However she counterbalances this focus on autonomy by underlining that it is not mirrored by similar attention to "academic duty".

Li Xiaoping for his part argues that, despite the Law on Higher Education of 1998, the autonomy of the universities remains considerably circumscribed with much control still being vested in the Ministry of Education and other government authorities. If the universities and the other tertiary institutions are to play their full part in addressing national and provincial needs, real autonomy at the local level, and its essential counterpart – accountability – will provide the flexibility to respond to emerging needs effectively.

Scarcely any conversation on education in China will last very long before the problems of funding are raised. The expansion of enrolment, the restructuring of institutions, the redesign of courses to make them more relevant to the new demands of a high-technology knowledge-based society, the salaries of a growing body of teachers, professors and researchers all exert ineluctable pressure on funding arrangements. The transfer of national universities to provincial governments has also meant that the share of central government funds (which under current policy will remain at a flat rate) in the overall budgets of the institutions is declining. The aim of the government is to raise the proportion of GDP spent on education as a whole to 4% from the current level of less than 3%, which is low by international standards. Pattern of financing are changing. Tuition fees, which in certain urban universities are estimated to represent as much as 50% of a student's direct education expenditure – see Qi Yeguo and Chen Yukun – are becoming a growing source of income. Fees have been rising; in some cases from 10% to 15% of total university revenues. For private universities, fees, of course, account for a much larger proportion of income – in some cases more than 90%. But there is also growing evidence of a more entrepreneurial spirit, with universities setting up their own companies to commercialise the fruits of their research and thus deriving important income.

As the financial requirements of the institutions increase, more creativity and innovation in unlocking new sources of funds will be needed.

Management structures, too, will have to adapt to encourage and permit this to happen.

Thanks to the excellent organisation by the university, the Tsinghua seminar has provided an invaluable opportunity to share experiences and to begin to find solutions to the problems that beset all education systems faced by rapid expansion. It has also proved to be a useful prelude to an OECD study on tertiary education in China as part of the continuation of the thematic review that was carried out in twelve OECD countries and published in 1998 under the title *Redefining Tertiary Education*.

WHAT IS FACING CHINESE HIGHER EDUCATION IN THE NEW CENTURY?

Gu Mingyuan
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ABSTRACT

In the last decade of the 20th century, higher education in China made impressive progress. Great changes took place in the educational system and structure, while modifications of special subjects, as well as curricula, were made. In particular, the increase of enrollment in colleges in 1999 had a great impact on society. Not only more students enrolled but, more importantly, there was a strategic shift in Chinese higher education from an elite-oriented to a public-oriented system. This will lead to improved intellectual standards in China and will enhance the chances of social mobility. However, great efforts must also be made in order to establish a modern higher education system with distinct Chinese characteristics. Further development and reform of the higher education system depends mainly on changes in attitudes and values.

I. Challenges facing higher education

Among the challenges facing the higher education system in China, the four following challenges are of special significance.

1. The challenge of the accelerating development of science and technology

The speed of development in science and technology is striking in the 20th century, especially so in the last few decades. In addition to the developments in nuclear and electronic technology, greater achievements have also been made in many fields such as natural sciences, astronomy, studies of the marine environment, information technology, biology, etc. At the beginning of the 21st century, science and technology are developing at even greater speed in the world, with more and more disciplines integrated and knowledge updated. How higher education can adapt to the new development of science and technology and how it can produce more qualified people has become a common concern in every country.

2. The challenge of social reform and innovation

Since the end of the Cold War, the division of power in the world has undergone considerable change. However, the world is still not at peace and international competition is becoming more and more intense. The application of science and technology in every field of society has triggered social reform as well as changes in values. Although material wealth has increased, morality has worsened. This can be seen in a higher number of drug-users, an increase in the crime rate and many other social problems. These problems have become issues that educators regularly have to contend with.

3. The challenge of reform in the economic system and methods of production

The move in China from a planned economy to a market economy involves changes in administration, enrollment, student grants, specialisation and curricula. At the same time, methods of production are also shifting from diversified to intensive, which require a more innovative and practical approach from graduates.

4. The challenge of the conflicts between Chinese culture and Western culture

The first conflict is that of Chinese culture and Western culture. The open-door policy will certainly strengthen international communication and facilitate the introduction of advanced science and technology, which inevitably brings about the infiltration of its culture. Colleges, as a cultural agency, should have the responsibility of deciding what to adopt, what to borrow, and what to leave out from Western culture. By doing so, colleges could select elements from the reservoir of international cultural heritage, which would be beneficial to our culture.

Another conflict lies in the clash between traditional and modern Chinese culture. China is a country with a long history and outstanding cultural background. As a legacy of the past, Chinese culture will inevitably be both quintessential and deficient. Therefore, the higher education system in China will also be compelled to choose what is useful from Chinese culture and create a new culture on the basis of the traditional one.

II. The strategies of the Chinese higher education system

What should we do to meet the challenges facing higher education in China? In fact, challenges can also be opportunities. In order to satisfy emerging needs, higher education can take a big step forward. In my opinion, we should deal with the following ten issues in order to solve emerging problems.

1. The relationship between colleges and society

Colleges should strengthen their links with society and aim at helping society develop. In a market-oriented economy, colleges need to keep in touch with society in order to survive. To be more specific, colleges should contribute to the scientific, cultural and economic development of the community. Colleges are located all over the country. Except for a few key universities in several big cities, local colleges should also aim at training all kinds of intellectuals to work towards social development. Colleges should be practical in setting up their objectives. Instead of aiming at becoming a first-class key university, each college should have its own special characteristics based on its local resources. Each college should combine popularisation with improvement. Although some of the subjects are regarded as first-class or prestigious, many other subjects are quite ordinary. However, these ordinary ones can also train persons to suit the needs of the local areas. Colleges are, overall, the most top level higher

education agencies in those areas, so they should not only serve the local economy but also contribute to cultural environment. This will help the sustainable development of the local area.

2. *The relationship between government intervention and college-initiated effort*

In a market economy, colleges frequently express the wish to act independently from government. Globally, more and more governments tend to intervene in higher education. This is due to the growing importance of college status in international competition. The influence of government in some countries can be seen through its legislation and financial aid. Colleges can decide how to run their colleges themselves. In China, the situation is quite chaotic because colleges do not think that they can act autonomously. However, colleges are in fact acting as they like. Therefore, legislation should be passed and strengthened in order to clarify and specify the rights and responsibilities of autonomous colleges.

3. *The relationship between popularisation and improvement*

Higher education has spread worldwide. In most developed countries, the enrollment at colleges reaches around 30%. The numbers even exceed 50% in some developed countries, while in China, student enrollment only reaches 10%. In the last few years of the 20th century, great changes took place. As for secondary education, more and more young people are enjoying the right to receive higher education. But the popularisation of higher education does not necessarily mean that elite groups are not formed. There are many different types of college, that each has its own specific requirements. The quality of these colleges also differs.

In most countries, only a few key universities get support from the government so that high quality talent can be fostered. In China, graduate numbers are targeted, but the distribution of different colleges of the whole educational system needs to be taken into account. The diversity of colleges of higher education will meet the needs of many young people who want to receive higher education, while at the same time, higher education will also provide training for graduates to meet the needs of the high-tech industry. Thus, both high-quality colleges and vocational colleges are badly needed.

At present, investment in vocational colleges is far from sufficient. There are many problems in the guidelines and patterns. People's awareness of the

importance of vocational training has not been raised. For this reason there are few vocational colleges and a poorly defined vocational higher education system. In fact, those who have received vocational higher education are in great demand in China. Even in developed countries such as the United States, the number of students graduating from community colleges is higher than that of college graduates. In China, we do need more students to graduate from higher vocational colleges.

4. The relationship between gaining knowledge and cultivating students' practical skills and social responsibilities

Since the 1980s, the objectives of higher education in China have greatly changed. Educational experts no longer emphasize the breadth of knowledge students should master. More attention is paid to teaching students various skills. As Boyer, chairman of the Carnegie Educational Reform Fund, says in his book *Colleges – the Experience of American Undergraduate Education*, "the success of today's college education is that students' skills are greatly enhanced." Meanwhile, he also emphasises the cultivation of students' social responsibility. He says: "The final aim of undergraduate education is promoting them to shoulder their responsibilities" (see *The Trend of Educational Reform in Some Developed Countries*).

5. Quality education

The essence of quality education is the cultivation of students' abilities to innovate and practice, and it is based on moral ethics. The word "quality" in quality education can be interpreted as qualities of morality, scientific knowledge, physical and psychological qualities, and so on. I would like to think that quality education can provide one with the means to treat nature, society, others and oneself properly. A qualified college graduate should be fulfilled in these four areas.

6. The relationship between teaching and scientific research

Colleges are institutions in which various talents are cultivated. Their main task is to teach all kinds of skills. But colleges without scientific research projects will also lag behind the times and not train a workforce able to meet the needs of its time. This is because we are now living in an age in which science and technology are developing at an accelerating speed. In a word, colleges cannot survive without scientific research. At the same time, colleges are also the basis

of the national scientific innovation system. They should not only pass on knowledge that mankind has already grasped but also develop new scientific knowledge, new ways of thinking and new values in order to accelerate the progress of society. In this sense, scientific research is indispensable to colleges. Meanwhile, its educational duties should not be neglected. Teaching, especially the teaching of undergraduate students, is of primary importance. The priority of a college which trains undergraduate or diploma students should always be its teaching.

7. The relationship between fundamental research and applied research

In the past, more emphasis was put on fundamental research within the higher education system. Today, with science and technology increasingly interwoven, colleges are involved in the nation's science and technology innovation system. In this context, more attention needs to be paid to applied science. On the one hand, the study of applied science and its implementation will benefit colleges financially. However, fundamental research is essential to colleges, whose research findings will enhance the quality of teaching. Therefore, fundamental research in higher education cannot be neglected.

8. The relationship between basic knowledge and specialisation

A college is an institution where students acquire special skills. In the past, knowledge of a speciality was encouraged. Therefore, the divisions of disciplines were very specific and students could study only one subject. In the United States, these graduates were called "talents with handbook knowledge". In the Soviet Union, they were addressed as "open experts". In this age of information, these graduates find it hard to adapt to the needs of society. Therefore, the best way higher education can prepare students is to strengthen their basic education.

To ensure quality education, more efforts should be made to further basic education. This is also named "general education", "liberal education" as well as "free education". It implies that students of all subjects should receive a general education and study common disciplines. The aim of general education is to help students develop intellectually, morally and physically. Boyer divided the content of education into the following seven categories:

- Language: the basic tool of communication.
- Art: the quality of aesthetics.
- History: the history of life.
- System: social system.
- Nature: the state of the planet.
- Job: professional value and recognition.
- Development: self-value (worth) and meaning of life.

In 1992, Yale University put forward a general education curriculum as elective courses, including foreign culture, history, literature, morality, natural science and social analysis. One can see from this curriculum that more attention has been paid to the social sciences.

The job market also requires changes in the higher education system. In a planned economy, graduates can secure jobs according to the subject they studied at college. Nowadays, because of selection, graduates are required to have a broad general knowledge as well as sound fundamental knowledge of their subject.

9. The relationship between subject division and integration

In the last few decades of the 20th century, science and technology became more and more diverse as well as more integrated. On the whole, the total amount of knowledge doubles every year and the overall tendency of development is integration. With the increasingly higher demand and richer content, how higher education can set a reasonable curriculum and provide more effective teaching is an essential and complex issue. Many experts believe that the reform of curricula should not simply involve the increase in the number of curricula taught. The integration of curricula and the enrichment of their content are as important as the increase in types of curricula, if not more so. Teachers should help students to make full use of the knowledge they acquire rather than sub-divide the basis of their knowledge. More attention should be paid to inter-disciplinary and frontier subjects because innovation very often takes place at this level.

10. The relationship between teaching and learning

Students should be given enough space to think and learn on their own in order to cultivate their abilities to innovate and practice. They should also be allowed to take initiative in their studies. In this age of information, teachers can no longer teach students everything. It is important that students be taught how to learn so that they can acquire as much information as possible. Internet technology enables students to do so. However, it must be kept in mind that machines can never take the place of human beings and that a computer will never replace a teacher. Students will always need teachers' guidance and assistance. A teacher's personal touch, campus culture and an academic atmosphere sustained by teachers will never be replaced by a machine, however advanced it might be, and will never be acquired by self-access learning.

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ACADEMIC FREEDOM AND ACADEMIC DUTY IN CHINESE UNIVERSITIES

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ABSTRACT

Freedom and academic duty in institutions of higher education are two facets of a pair of contradictions. In China, there is more concentration on the concept of freedom than on the duties of academic life. First, this paper highlights the limitations in freedom from its origins through its development and its lack of status as a concept. It then criticises the weak sense of duty, pointing to hegemony, corruption and the lack of proper regulation. The necessity of a sense of academic duty is emphasised. The paper concludes with a summary of its three major findings and two main points.

I. Introduction

Higher education institutions (HEIs), be it universities or colleges of higher education, are places where scholars congregate and the administrative body, members of the faculties and students share a daily academic environment. The most important roles of a university are the preparation for and granting of degrees/diplomas, creation of knowledge and stimulation of technology. The quality of the education and the levels of science and technology offered and the consequent prestige of the HEI form the foundations of their life and that of true scholars. The question must be raised as to how such high standards and prestige are to be obtained. Academic conditions both on and off campus need to be taken into consideration. Academic freedom and duty appear to be conflicting concepts in an academic undertaking. So far as Chinese higher education is concerned, it is generally acknowledged that the last two decades have seen major reforms. One of the changes within the academic world has been the growth of autonomy, previously merely a myth in China. However, this has stimulated ever-increasing demands for even greater autonomy. Such demands are reasonable but do not take into account a responsible attitude to academic duty.

Professor Donald Kennedy, former president of Stanford University, USA, made eight points about academic duty in his key work "Academic Duty" (Harvard University Press, 1997) which can be summarised by the words: "*teach, mentor, serve the university, discover, publish, tell the truth, reach beyond the walls, change*". His observations apply to common worldwide problems, although the author was referring to the situation in American universities.

Some would argue that, in China, there is not yet enough academic freedom and that it is still too early to look at the issue of academic duty. It is my view that in fact it is not just scholars that benefit from freedom and government and student from duty. Freedom stimulates inspiration in any domain while a sense of duty encourages a more rigorous and determined academic approach and achieves quicker results. Thus, be it government, nation, university or faculty, all can benefit from both liberty and duty. In philosophical terms more responsibility means more liberty of action. For instance, the most controversial issue in Chinese higher education recently has been the merging of institution by government action and this is a case in which more freedom will in general be considered necessary. Yet, it is my opinion, even in this case, that academic duty is just as vital as academic freedom. If an institution is duty-bound to comply and merge with other institutions and the scholars' responsibility is to submit to such arrangement – whether to rationalise the scale of operations or to

widen the curriculum or to implement a really first rate university education, obtain better funding – then the HEIs and their faculties should be freely empowered to fix priorities and choose their partners. This would include the setting up of the organisational structure and subsequent running of the merged HEIs. Should an institution not merge but remain a small highly rated establishment, which was the path taken by Caltech in the USA, for instance, government should concur with this decision. Such a policy would probably be the best solution for the institution in question and also encourage diversity in Chinese higher education.

This paper differs in some respects from Kennedy's book. It discusses the limits of academic autonomy and is critical of the weak sense of academic duty in China today, investigating the relationship between academic freedom and academic duty.

II. The limitations of academic freedom

The notion of academic freedom can be traced back to European universities in the Middle Ages, although it was only explicitly formulated in 19th century Germany. This study finds that the Western concept of academic freedom has limited application in the current Chinese context.

1. The growth of the concept of academic freedom

In 1930, Arthur O. Lovejoy pointed out the freedom "to investigate and discuss the problems of his science and to express his conclusion, whether through publication or in the instruction of students, without interference" (Knowles, 1978). In 1978, Frank A. Tredinnick wrote, "academic freedom is the freedom of the teacher within his or her field of study. It is a safeguard that allows researchers and teachers in institutions of higher learning to pursue their work without the inhibition, prohibition, or direction of political, ecclesiastical, or other administrative authorities, regardless of their personal philosophies, behavior, or life-style" (Knowles, 1978). In 1992, G. Caston explained "the freedom of the individual academic to teach, to do research, and to publish without any external interference" (Clark & Neave, 1992).

The quotations cited above define three areas relating to academic freedom and the autonomy of institutions – teaching, research and publishing. However in the survey conducted for this study 92% of those interviewed thought it was not enough to define academic freedom in these three categories.

Since World War II, there have been many changes in higher education worldwide. Growth and diversity in participants means that institutions are called to meet varied demands from varied *clientèle*, while financial retrenchment and international competition put them under heavy pressures. Perhaps greater freedom or greater self-determination is necessary in pursuing academic excellence in this time of change. So, we should be poised to accept a new and expanded definition of academic freedom insofar as the academic activities of HEIs are concerned.

This paper sets out to formulate a concept. Freedom in the academic field is a kind of right and its spirit is kept alive in areas such as teaching, research, developing technology, diffusing ideas and moral values, advancing the nation's interests and even fostering progress on a worldwide side. Although affected by political and economic pressures, academic activities should lie beyond these. Insofar as the relationship with the law is concerned, all academic activity should remain within its bounds and the law itself should provide a framework that is a guarantee for academic development.

Generally speaking, people approach academic freedom from their working experience. As scholars, they ask for autonomy in teaching research and service, with freedom to make their achievements known without interference. This is all very well but further issues must be taken into account.

On the one hand there should be ample scope in practice for the exercise of academic freedom: what should be taught and how; what research projects are to undertaken and how; what is to be done to serve the institutions and the country, and how best this can be done. Power to make decisions should be delegated, always providing these do not contravene the national constitution and other laws. There should also be enough time made available for extra-curricular activities and completion deadlines should not be unrealistically exacting since some research requires flexible scheduling. Also, allowances must be made for experiments that prove unsuccessful. Most scholars are not commercially minded. It would therefore be wise to give them free rein to their natural assets, which serve their institutions and the nation. Moreover, scholars are not journalists, they are making known genuine scientific achievements in expanding human knowledge, not just recording daily news items or acting as government spokesmen. Their freedom lies in reporting true facts and not in confusing the public. Preparatory studies should be made prior to government policy-making as well as proceeding and remedial studies during periods of reform, after mistakes have been made. Nowadays, scholars can rely on academic power having management impact. Senior administrators would do well to try to understand the academic temperament with its sense of self-pride, together with the academic privileges granted to intellectuals. When publishing,

scholars are propagating the truth freely and not falsifying it. In education institutions, scholars should be at liberty to provide training skills that fit the needs of individual students. There is no need for all students to be educated to one standardised and unified format.

On the other hand, the concept of academic freedom also has a more spiritual aspect, permitting scholars and institutions to act according to their legitimate interests and inclinations. Some aspects of academic life, such as reputation and social acceptability are not measurable in material terms yet are an essential part of it. This inner quality is proper to academic life and comprises an inestimable feature that differentiates HEIs from other kinds of social entities. For individual scholars nowadays there are three goals: academic success, attaining a bureaucratic post and future affluence, in contrast to the purely academic goal envisaged in both the medieval European tradition and throughout China's own long history. It is most improbable that all three are attainable except in a few rare cases. True scholars will give priority to academic achievement, title and publishing their work, acquiring professional expertise and even winning a national or international reputation in their field. Nevertheless, an increasing number of Chinese academics are more looking today to acquire administrative posts. There are those amongst them who wish to make good use of the influence attached to such positions in academic affairs since, in China, such powers are much greater than in academia. Then, there are those who seek to impose absolute control on academics by bureaucratic means alone. This is an abnormal attitude and in effect amounts to a revolt against academia.

As for financial objectives, financing should be offered by the government and the institutions themselves as well as taking into account market forces. The contribution of scholars to society is multifaceted, visible and full of potential. More prestige should be attached to achievement in educational training, scientific discovery and serving the nation, rather than to stars of the entertainment and sports worlds. If the government and the public were to realise this and the necessary measures were taken, scholars would not find it necessary to use their freedom to earn more money on the side. If scholars put to use most of their abilities and time in off-campus employment, they are misusing their freedom, which will inevitably lower standards within the universities.

In short, academic freedom is a term which is suited to the concept of higher education and academic affairs, but which should evolve in line with changes therein. Its definition should not remain static.

2. *The limitations of academic freedom*

There are two aspects to academic freedom: the autonomy of the institution and the freedom of the scholar. Actually, a pure concept of freedom in academic terms is unrealistic and has never taken top priority anywhere or at any time. In the history of the world, religion has had a more powerful influence. Consider for example the unhappy fate of Copernicus or Galileo. Political or military power have also prevailed, as in Napoleonic France, when there was only one imperial university, and in the case of the atomic bomb project. Economic power is also much more important in China today. The term academic freedom can therefore be seen to have different meanings in different contexts. In China, we have not yet put academic freedom to its proper use.

2.1. The scant requirement for academic freedom

Some measure of academic freedom has already been acquired: student training, drawing up curricula, establishing standards of quality, advising graduate students and choosing the content of lectures and seminars. We can also choose which projects we wish to submit to various organisations, in case of acceptance, we are authorised to organise these projects as we like. As for research results, they can be presented in paper or book form although some may not be published. The university benefits in many ways but primarily by the promotion of academic excellence. In China, "service" to the university means mainly running the campus companies, though a lesser aspect relates to academic affairs. Unfortunately, Chinese academics in general do not use their high intellectual attainments to further their rights to influence national policy-making. Nor do they ask strongly for the force of the law to protect their reputation, position and normal daily rights. In our survey, 67% of the subjects, thought that their research results could have no effect on policy-making at a national, or even at university levels. Furthermore, 16% of those questioned said that such results should not affect policy-making.

Student rights are too limited, consisting only of the right of access to HEIs when they have reached the necessary academic standard. They are not free to change instructor, even in cases of poor teaching or to speed up their graduation, as a full credit system has not been introduced. They might find themselves studying in groups of 30 or more with no individual personal tuition. They have very little opportunity to complain about poor teaching, individual professors or the administration. In fact, their academic freedom is restricted freedom to learn and be trained on an assembly line basis. They have been largely ignored in discussions on the subject.

HEIs are traditionally attentive to government and express little apparent desire for autonomy. They do in fact possess some freedom in student admissions, internal staffing and budgeting. Yet there is a ceiling on admissions and obstruction to the laying off of university personnel. In the current situation of regrouping of HEIs, should an institution be reluctant to comply with government directives, it could be deprived heavily of some funding and miss the chance to improve its status. This is a real risk, because in China "Inequity is also caused by the traditional philosophy of hierarchical allocation of resources where some institutions have priority because of their past prestige and expected contribution, but no necessarily according to their current performance... Inequity of the second type is deeply rooted in the tradition that key universities should receive a better share of the national allocations"(Buchert & King, 1995).

2.2. *The unsatisfactory state of academic freedom*

Academic power is weak when compared with administrative power in China. Some academic committees do exist but their rights are limited. Some administrative directors and even deputy directors of HEIs possess great powers but lack academic background. Even well known faculty members must submit to orders even though these may be misguided, arbitrary and unreasonable. A professor without administrative title is free to teach and conduct research, but has no voice in the conduct of the institution's business since senior administrators disregard ideas coming from the teaching and research corps. Moreover, a professor with an administrative title would publish and obtain research funding more easily. In China, academic relationships are not as close as personal relationships. In recent years, contacts on a personal level have started to appear in academia. Up to a certain extent, professors have the right to deal with problems related to student learning. Students may attempt to influence their grades by extra curricular activities, though this can be easily dealt with by the professors themselves. However, students' friends, even senior officials and administrators may also attempt to influence student grades by discussing with professors. Such a situation is not so easy to contend with. In our research, it is mentioned that scholars are free to submit their research projects to appropriate bodies but the network of personal relations influences even the peer reviews and approval procedures, except in some of the larger national institutions. Therefore there is no real freedom for projects.

The situation in China concerning academic freedom is not satisfactory. In our survey 75% of respondents were dissatisfied with their situation in this respect. However, sometimes the reason for this lies not with the governing bodies, but with the academics themselves. G. Caston pointed out "academics may feel that

their freedom is most threatened by others within the university, for example, by the administration, head of department or by colleagues" (Clark and Neave, 1992). The real threat to academic freedom comes to the young from the older generation – student or former student v. professor, general scholar v. director – and this attitude is passed on from generation to generation. The young worry that their new ideas might appear to be disparaging their respected seniors. Others wait for the "help" of their seniors who might use "ornemental" words to speed their promotion. Some perhaps, have no innovative ideas at all to offer. Thus, traditional culture, selfishness, and lack of ambition are three elements that wear down the spirits of some young scholars, who waste their most productive and creative years at the bottom end of the ladder. This is a depressing state of affairs.

2.3. Weaknesses in the policy of academic freedom

The policy of promoting academic freedom is weak. Even the relevant laws and regulations are not all in place. There is no statute in place that guarantees their autonomy. Although there is more autonomy than in the past there is still not enough and our situation cannot compare with that of our Western counterparts. If institutions ask for more autonomy government officials might well reply "More? Why more? We've given you so much already". Most probably, such officials are not aware that freedom and autonomy have been an integral part of higher education for centuries. Giving academic freedom back is simply a repayment that does not warrant special gratitude. It is quite accepted that the government have macro control over our institutions to a certain extent, as they are government funded public bodies and share a common goal in the national interest. The government asks HEIs and scholars to co-operate with their overall planning. However, HEIs are mainly academic bodies and as such differ from economic or political entities. They should have the rights they require in order to deal with academic affairs themselves without outside interference. From now on, policy on the development of HEIs should be drawn up jointly by governmental planning and the concerns of scholars.

A solution to current problems is not attainable without such an approach. Efforts need to be made in two directions: firstly, the government should have a full understanding of the academic freedom and autonomy issue. Indeed, our government has made a good deal of progress in this respect. Naturally, all officials are not equally well informed. Freedom and autonomy are not anti-government concepts to gain political rights. The aim is rather to create environment conducive to productive work. Officials ought to understand and support this concept and central government should put in place policies or regulations giving strong support to maintain such principles. On their part,

academics should concentrate on maintaining and improving their professional reputation. Having academic freedom should not imply irresponsibility *vis à vis* the nation, the people and their academic work. Being free does not mean abusing free time to earn revenues off campus, promoting student discontent, misleading the public and avoiding quality management or even to use freedom as a licence to organise anti-government political gatherings. Such misuse of academic freedom can only lead to its total loss.

The reason for our insisting on policy law and regulations is to provide a frame of reference for implementing academic freedom. To this end our institutions and scholars should be concentrating their discussions at present on academic duty.

III. A weak academic duty mentality

Academic freedom has been defined here as the right for scholars to pursue and maintain the true spirit of the pursuit and diffusion of knowledge. We now go on to attempt to define academic duty, which also can be considered as a right as well as an obligation, i.e. the right to participate in academic work. We shall now set out to review the irresponsible attitude to be found in Chinese universities, with a view to emphasise the importance of the duty concept in the education reform and development process in China.

1. A situation of irresponsibility

1.1. Academic hegemony

In China, to be nominated as supervisor of PhD students is something very special and is the highest ranking a university teacher can attain. It gives the holder almost total control over academic work even if some supervisors are not, for historical reasons, PhD holders themselves and may not be qualified to develop research projects and guide students in their work. Most of the young professors who have their PhDs and are engaged on their own research projects have not been given the title of supervisor. They are therefore obliged to submit to the authority of the older, titled supervisors. Similar academic "hegemony" may also prevail in the relationship between supervisors and students and even within peer groups themselves. "Inbreeding" – i.e. academics who continue as staff in the same institution where they received their final degrees – reinforces hegemony. It sometimes happens that four generations of such inbreeding occurs in the same department. In such circumstances, it is very difficult for the

young generation to defend new ideas, thus offending the older generations they work with. Acting in this way is counter to their cultural heritage. The legacy of feudalism is still detectable in such academic relations.

Another kind of academic privilege is used by members of academic committees, such as those involved in decisions on titles, research projects and degrees. Secret ballots and personal interest in review make supremacy worse. Furthermore, there is as yet no effective system in place for supervising these committees and resisting the influential personalities. The academic life of young scholars is controlled by members of the faculty and they are learning bad habits as well as good ones from the review procedures. As a result, some young members of the faculty are becoming discouraged, others are acquiring these bad habits and only a small minority are strong-minded enough to persevere effectively in their work. These failings result from a defective academic heritage.

1.2. Corruption in the academic world

There is an old saying in China that "a place of education is a clean place", meaning by "clean" that there is no corruption, crime, etc. But this is unfortunately no longer the case. Various sources of corruption are to be found in some HEIs and the warning bell is ringing.

In the first place there are dealings involving money, power and the acquisition of academic title and reputation. Degrees can be awarded by the autority that grants project funding. Within the teaching hierarchy promotions can be obtained if funding and the number of publications meet the requisite standard. In fact a project should stand on its own merit and not depend on the amount of funding available. Furthermore, in a publication, quality is more important than quantity. In the review process, individualism is spreading into departmentalism. As for academic reputation, it cannot seriously be imagined that this can be bought or approved, but it must be acquired gradually, *e.g.* by publishing papers in general journals, then in journals of renown and finally by building up a large network of professional contacts and serving on committees.

Secondly, some cheating occurs in academic publication, such as partial or total plagiarism, passing off someone's ideas as one's own, using ghost writers or plain misleading of others. Moreover, there is also of the unacceptable practice of co-signing papers without making contributions to the work.

Thirdly, the pursuit of personal gain can now be seen in the academic world. A part of project funding can end up in individuals' pockets and public money

spent on private travel expenditure. There have even been cases of sexual harassment. Some scholars use professional contacts in the academic field for personal non-academic purposes, *e.g.* the above-mentioned hegemonic and corrupt situations. Too much emphasis on financial gain and building a career on personal contacts is lowering standards and creating a bad working atmosphere for the younger generation.

1.3. Academic irresponsibility

HEIs are places of enquiry and training. Yet we find that professors and students arrive late at lectures and the use of mobile phones are often a distraction. Teachers assign less out of class work and care less about students' behaviour. In some cases grades are given undeservedly and students try to negotiate them. Data on the amount of teachers' preparation of classes is impossible to obtain. Some supervisors meet their graduate students very infrequently. In research, clear data is on record concerning the number of projects underway and the corresponding funding. However, the value and originality is very difficult to assess and detailed information on the actual use of research project is extremely difficult to obtain. As for university service, this got off to a bad start in the early 1980s. This was unfortunately named "chuang shou", which translates into English as "making extra money" or "creating additional income", whatever the source might be! Although attempts have been made, changing this misleading term is in practice difficult and university service is not meeting the goals set. Measures need to be taken to change the concept of remunerated service from "service is for money" to "service is a natural function of a university". In this way services provided could be graded according to the level of institution, leaving those with excellence in nationally important science and technology to exploit this for their own reputation only and not for gain.

We do not deny that marketing has an impact on higher education but the latter has nevertheless its own rules depending on its goal, mission and practice. Higher education can forge ahead when market forces are aligned with the regulations. We find, in general, that the stronger the market force is, the less is the sense of academic duty. In some open and developed cities of China, a significant number of professors become part-time company managers or hold other industrial jobs. Except during teaching hours, most of their time is spent at their second or even their third jobs. They have thus not enough time and energy to carry out their primary post as a professor. In the US, professors are closely involved in teaching and in supervising research and, in addition, often obtain extra-mural work in business or industry. They may thus earn the equivalent of two to three months' salary mainly during vacations (in the US,

the salary is paid in nine or ten months depending on whether they are private or public institutions). However the situation is different. It is just not possible to hold down two or three jobs at once and still have enough time and energy for efficient academic work. Where market forces are stronger, purely academic strength, for instance in basic research, is weaker. Although universities are no longer ivory towers and professors need no longer work exclusively within them, the fact remains that holding several jobs at once is not good for the academic world.

Hegemony, corruption and irresponsibility should be excluded from the system. In fact, the majority of academics still take their responsibilities seriously and are not involved in hegemony, corruption and irresponsibility, to which they are vigorously opposed. In our survey, 100% of respondents think that there is hegemony and corruption in the Chinese academic world, while 41% of subjects think that "academic duty" is not a burning issue and is not one of the goals pursued. 16% of those replying stated that they have not yet considered the concept of academic duty. Overall, we conclude that, relatively speaking, the university is still a "cleaner place". Nevertheless, the situation we describe in this article gives ground for serious concern. There is thus a pressing need for remedial measures.

2. *The necessity of emphasising academic duty*

2.1. The need for reform / opening up in China

Firstly, in the centralised political system established in 1949 the voice of the people was generally not heard, and the decision-making was entirely made at the top, with little or no input from the general public. Society was seen as a struggle between two social classes, the proletariat class and the capitalist class, and intellectuals could not express their academic opinions freely. The issue of "academic freedom" remained in a Pandora's box as ideas and dreams. The educational process amounted to following the official directives, not those of academia. In fact, academic duty became a kind of political duty. The good news now is that our political system is becoming decentralised. Academics should thus assist government, central and local, to make political decisions concerning systematic reform, national defense, global competition and diplomatic affairs from an academic standpoint. They do not necessarily have to take part in political activities directly, but much of their academic research can have a significant influence on the decision-making.

A *second* aspect of this is that in the past, a planned economic system was adapted to the China's centralised political system and that this was operative for decades. Everything had to follow the national plan, so that initiative was frowned upon and people just acted according to planned directives. In higher education, the institutions and their faculties had no concerns other than respecting the governmental plan, which covered such areas as student recruitment and graduates. Teaching content, methods and requirements were also regulated by governmental departments. The life and work of senior university officials and professors were thus much easier than today, since they did not have to worry about staff, students, nor finance. In the transformation of the planned economic system to a market system, scholars now have much heavier duties than ordinary citizens, especially in this knowledge-based age. Accordingly, they should be closely involved in the conversion to a market system under socialism, and offer their academic support to governmental economic decision. The most important is to transform academic research achievements into real productivity in order to encourage growth of the national economy.

Thirdly, China kept its gates shut for a long time. We could not learn the good and bad lessons of other countries. The gates have opened since the end of the 1970s so that academics now have a duty to study others' experiences first, and inform government and the public of that which is good, and which is worth introducing into China. This includes ideas in science and technology, education, and other areas. This should be of great help in avoiding mistakes. However, we first need to carry out detailed investigation.

2.2. *The requirement of higher education itself*

During recent national reforms, the higher education system itself has undergone huge changes. Firstly, higher education is changing from an elite system to a system more geared to mass education (the participation rate in cohort age group was 9.07% in 1997, and it will be 15% in 2010 as per government plans – 15% is the international standard of mass higher education). This means that large population groups and of various nationalities, age and physical status will participate in our institutions. Institutions must provide education for the masses and for the elite. Thus academic duty is becoming much heavier and diverse.

Secondly, all of the Chinese regular full-time HEIs were, in the past, public, and students did not pay any of their tuition and fees, which were paid for by the state, which controlled the system, so that HEIs had little say in educational matters. The public higher education financial model has been changed since

1997 to "cost-sharing" (Johnstone, 1986). Institutions and faculty must now serve more than one "customer" (the state) and the costs are shared by government (taxpayers), students (or parents), private donators, and other sources. So academic duty must now extend to different categories of client.

Thirdly, China has had more than a thousand private HEIs. They have broken the public institutions exclusive domination of the higher education scene. Public institutions now have to face very serious challenges in quality, efficiency, effectiveness, and to compete with private institutions for students, funding and star-professors. The private higher education sector is not yet a strong component in Chinese higher education. However, it has a bright future. Provided it attracts the governmental policy support, borrows good experiences from overseas, and makes great efforts itself, it should grow rapidly.

IV. Conclusion

Within Chinese higher education, individual institutions now have much more autonomy and faculty have more freedom than they had twenty years ago. However, they still ask for autonomy and freedom strongly but talk about duty very little. We regard this as unacceptable. As we have concluded in this study, there is time to remedy this by focusing on the duty aspect while still recognising that academic freedom is still not fully attained.

1. Three findings: the relationship between freedom and duty

1.1. Integrity and individuality

Freedom and duty have opposite meanings, but at the same time they are complementary. Freedom applies to the whole system because institutions and faculty ask for autonomy from government who used to control. The latter grants autonomy, which represents a transformation from centralisation to decentralisation. Correspondingly, a sense of duty and responsibility is required from individuals who are required to feel a distinct sense of commitment to society as a whole and from individuality comes integrity, that is, individual commitment to society, government and the people.

1.2. Object and subject

Freedom and duty are two sides of a pair of basic contradictions with objective and subjective meanings. Freedom is a person's need for the objective world

from the subjective standpoint. Duty is like a regulation which should be obeyed, and a kind of right and obligation which should be accomplished in order that things run objectively in an orderly manner.

1.3. Matter and spirit

Each of freedom and the duty has two aspects, matter and spirit. In terms of the former, there is freedom in training, studying of science and other subjects and daily academic management. There is also a duty aspect of all these and consequently we cannot speak nor act entirely freely. From the spiritual aspect, there is no true and absolute freedom, and freedom is just a pursuit of an ideal academic environment. It is useful for scholars' creative thinking and new ideas. Duty is also the spiritual pursuit of self-regulation and self-control. As a consequence, understanding and utilising freedom and duty in a responsible manner will stimulate academics to think and be creative, reinforce justice and responsibility, and promote innovation.

Academic freedom and academic duty go hand in hand and are interdependent. Getting and using one is a prerequisite of getting and using the other. Without freedom, we have no duty, and vice versa.

2. Two points – multi-factor integration of freedom and duty

Only by combining integrity with individuality, object with subject, matter with spirit, of freedom and duty, can we properly understand and implement "academic freedom" and "academic duty", thus maximising our academic achievement. The government should combine freedom with duty items in its overall educational policy, not only to be respected by institutions and faculty, but also by governmental officials charged with implementing such policy.

Beyond the Kennedy's eight elements of academic duty, the present study highlights and insists on the importance of the integration of freedom and duty. We must have freedom and the duty to diffuse true knowledge in education, and help students to become experts in their particular field and to be honest, to enhance their ability for self-study in the lifetime process of learning. In scientific innovation, we must guide the public correctly and not mislead them by working for our own ends. We should also attach importance to the spreading of the benefits of education amongst the nation, society, individuals and institutions.

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UNIVERSITY AUTONOMY IN CHINA
HISTORY, PRESENT SITUATION AND PERSPECTIVE

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ABSTRACT

As an administrative concept in higher education, university autonomy was an inevitable result of political reform and opening to the world in the late 1970s. From then on, the Central Committee of the Chinese Communist Party, the Central People's Government (state council) and the State Educational Committee issued a series of resolutions which set out workable measures for university autonomy. By investigating the current situation in twenty typical Chinese universities, the author points out that some aspects of university autonomy have to be implemented gradually. However, with the evolution of the social situation, there remain many problems regarding university autonomy. The main concerns are related to the autonomous right in recruiting, but problems also exist in other areas (financial affairs, granting of diplomas, etc.).

The main causes of the problems quoted above are analysed in this paper. The author points out that the strategy for solving the problems of implementing university autonomy is very gradual, and that the three bodies – government, society and university – must work in coordination; different types of university should be given correspondingly different autonomous rights.

I. Introduction

In the relationship between government and university, university autonomy is a most important question.

Since 1949, China's higher education system has chosen to adopt new developments which make it very different from the previous system. Higher education greatly depended on politics. A university was a subsidiary body of government. In close concordance with a planned economy, China's higher education management was extremely centralised. For example, admissions, job assignments on graduation, the use of resources, subjects offered, the curriculum etc., were all decided and controlled by the government. University autonomy did not exist until China initiated a policy of reform and opening policy in the late 1970s. Generally speaking, one can say that the history of university autonomy in the new China began only in the late 1970s.

II. Historical course of Chinese university autonomy

Before political reform and opening to the world, Chinese universities had almost no autonomous rights with regard to their management. As an administrative concept in higher education, university autonomy is an inevitable result of political reform and opening to the world.

In 1979, the presidents of four well-known universities in Shanghai published articles in the People's Daily to appeal to government to give some autonomy to universities (*People's Daily*, 1979). A commentator of the People's Daily wrote in his editorial that university autonomy was a problem which needed to be discussed thoroughly, and that constructive suggestions were welcome. After this, many scholars in higher education circles started discussing and paying close attention to the problem of university autonomy (Leo A. Orleans, 1987).

In 1985, the Central Committee of the Communist Party of China (CCCP) issued a "Resolution on Reform of the Educational Structure" which pointed out

that government should give more autonomous rights to universities, giving them the right to manage their own affairs with respect to third parties (Ruth Hayhoe, 1989). From then on, the Central Committee of Communist Party, the Central People's Government (State Council) and the Committee of State Education issued a series of resolutions which stressed the necessity for the introduction of workable measures on university autonomy.

In 1986, the State Council issued a document entitled *"Temporary Provisions for the Administrative Official Duty of Higher Education"* which stipulated that universities be given autonomous rights in the following eight areas: admissions, job assignment on graduation, financial administration, capital investment, personnel administration, job evaluation, teaching administration, scientific research, international academic exchange. This was the first clear official directive relating to administrative autonomy in universities.

In 1992, the State Educational Commission printed and distributed a report entitled "Several ideas about deepening reform and expanding autonomous rights for universities under the direct authority of the State Educational Commission", which contained sixteen items relating to autonomous rights for the universities under its direct authority. These items related to key aspects of university management and administration.

In 1993, the Central Committee of the Communist Party and the State Council formally printed and distributed the text *"Essentials of reform and development in the Chinese education system"*. The document clearly pointed out, and in depth, that the main problem of the structural reforms of higher education was to solve the relationship between government and university, between central and local authorities, the State Educational Commission and other ministries of the Central Committee. It also indicated that universities should set up a structure of centralised administration of government and that they be given autonomy with regard to their dealings with third parties. The autonomous rights of universities should be expanded further with regard to admissions, the elaboration of special studies, setting up of administrative structures, appointments and dismissals, the use of funds, job evaluation, remuneration policies and international cooperation and exchange, all in accordance with specific conditions. The government's role was to set out the legal framework under which universities operate, and to provide appropriate funds, information services, and guidance in policy and administration. In 1997, the State Educational Commission printed and distributed the document *"Several ideas about changing roles, tightening up macro-administration and expanding the autonomous rights for universities under the direct authority of the State Educational Commission"*, which includes eight new principles in addition to the "sixteen items" mentioned above. The new elements mainly related to

readjusting the relationship between the State Educational Commission and universities.

In August 1998, the Higher Education Act was passed by the Standing Committee of the Ninth National People's Congress. This was the first time that university autonomy was stipulated by law.

In June 1999, "the Third National Education Working Conference" was hosted in Beijing by the central government and the State Council. It aimed at promoting equality-oriented education and furthering educational reform. The resolution produced at the conference pointed out that university autonomy, as set out in the Higher Education Act must be implemented and enforced. Meanwhile, the supervision and evaluation of quality in universities was to be enhanced and self-discipline and autonomy was to be perfected.

III. The present situation and some principal problems

In late 1998, China's Ministry of Education (the former State Educational Commission) appointed four scholars (including the author of this article) to investigate the situation of university autonomy in twenty key universities in Beijing, Shanghai, Tianjin, Wuhan, Hangzhou and Guangzhou (Bie Dunrong *et al.*, 1999). During the investigation, many university leaders affirmed that their universities had more autonomous rights than previously :

- Firstly, universities possessed the right to develop specialised courses according to the needs of society and its own internal considerations, as authorised by the Ministry of Education.

- Secondly, they had more freedom to set up their organisational structures than previously.

- Thirdly, they possessed autonomy in the appointment and dismissal of middle-level staff.

- Fourthly, within the limits of a set quota, they could set standards for the level of a technical or professional post and award the equivalent of Masters degrees or Doctorates.

- Fifthly, they could apply for scientific research items to government and undertake the research items of other units on their own.

- Finally, with respect to capital expenditure and operational management, their freedom of action was clearly improved.

However, while the degree of autonomy in Chinese universities has increased in terms of practical implementation, the study revealed the following problems in university management.

1. The autonomous right of admissions

Almost all the universities which were involved in the study pointed out that universities should possess the autonomous right to establish the admissions policy, decide on the quota of students to enroll per district and to set down the standard of tuition. But these powers were still held by educational administrative departments and the finance departments of local authorities. Because the tuition standards must be examined and approved by finance departments, and due to the slow, bureaucratic procedures of the latter, universities are unable to determine such standards when term begins. This meant the universities were "working in the dark".

2. The autonomous right to set up specialised subjects

Many universities considered that it was not in keeping with a proper higher education system that the Ministry of Education lay down a centralised catalogue of special subjects and that any new special fields introduced by the universities must be examined and approved by the Ministry of Education, in line with the catalogue. Such a system does not allow universities to distinguish themselves by creating new courses, better adapted to society's needs.

3. Autonomous rights in teaching administration

The central government department concerned stipulates the required curriculum, even the content of courses and class timetables. Being unable to intervene in any of these matters, universities are unable to develop a creative approach to training.

4. Autonomous rights in financial affairs

Universities are required by their administrative departments to present final accounts twice a year. This was not in keeping with universities' actual situation and was not practical.

5. The autonomous right to grant students' diplomas

Universities considered in general that the granting of diploma was within the new principles of university autonomy. But the diploma was still printed and distributed by the Ministry of Education. This showed that government had no confidence in the universities. The universities were thus very disillusioned with the continued unified printing and distribution of university diplomas.

6. The autonomous right to participate in international academic exchanges

This right had not been implemented. When they went abroad or went in for other academic exchanges, not only university leaders, but also teachers, research workers, students, had to be granted permission by the administrative department at a high level. This limited the opening-up policy and restricted international exchanges between universities. Also, instead of universities, it is the Ministry of Education that invites foreign experts to come to Chinese universities. Procedures are very long and complicated and caused the universities a great deal of inconvenience.

IV. Analysis and perspective

The reasons why China's university autonomy has not been implemented fully are very complicated and are mainly related to the conflict between concept and practical implementation. For example, many government officials still think that a university cannot bear the responsibility involved with autonomous rights. Some officials simply do not have confidence in the universities. Also, for the universities themselves, the internal reforms necessary for autonomy are still incomplete. The rules and regulations concerning macro-control by government of university autonomy are also imperfect. This greatly affects the implementation of university autonomy.

In order to solve the problems arising from implementing university autonomy as set out in the Higher Education Act, a better relationship and coordination is necessary between the various parties concerned.

1. Four relationships needed to be coordinated

1) The relation between the government's macro-administration and the management of universities. Government and universities should work together in setting up and perfecting macro-administration of government and autonomous running of universities.

2) The relation between centralisation and multiplicity of administration : the universities are very different in terms of quality, working conditions, aims etc. Different universities need different administrative models. The unified administrative model does not favour the development of excellence and specificities of universities.

3) The relation between transferring rights and giving rights. Some autonomous rights which should be given to a university are transferred from central government to local government instead of to the universities. This adds a further layer of bureaucracy and hinders the universities' development.

4) The relation between rights and responsibility. Rights and responsibility are interlinked. Expanding university autonomy means not only transferring rights but also responsibility. Thus, university autonomy, the macro-administration of government, and the self-regulation of universities must be perfected together.

2. The strategy for implementing university autonomy

Our investigation and analysis shows that, in order to implement university autonomy, the following measures are needed.

1) Rights must be transferred gradually. Implementing university autonomy involves many aspects of government, society and the university, thus rendering reform an uphill task. The most important autonomous rights must be implemented first, then continued in different stages.

2) Different types of university should be granted different autonomous rights corresponding to their status. Some key universities of high

standing, for example, the universities directly under the authority of the Ministry of Education and those universities which have set up postgraduate schools, should possess extensive and full autonomous rights. For universities at a lower level, government should only increase their autonomous rights gradually and within limits.

3) Government, society and universities must work together. Implementing university autonomy needs to be done systematically. Government at all levels and government departments of education, finance, personnel, price, tax, etc, must work together. To shift responsibility onto others is to obstruct the implementation of university autonomy.

3. *Perspective*

In the new era, with the deepening of the reform of the political and economic system, university funds arise from various channels instead of the government only. Moreover, the indirect control and macro-administration of government and self-regulation and self-administration will be improved. All of these factors will benefit Chinese university autonomy, which will become practicable and at the same time government will control universities in a more effective way.

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THE THEORY OF TRANSACTION COST AND CHOOSING APPROPRIATE REFORM MODELS FOR THE HIGHER EDUCATION ADMINISTRATIVE SYSTEM IN CHINA

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ABSTRACT

The reform of the higher education administrative system in China has to adjust to the evolution of the country's economic system. Four models for reform have been set up temporarily, and are used as guidelines for further adjustment of the higher education system. These four models are gongjian (joint investment and administration by central and local governments), tiaozheng (transferring affiliation of HEIs from central government to local government), hezuo (cooperation between HEIs to share their resources), and hebing (HEIs mergers). These reform models do not guarantee success or failure The results of reform all depend on the context in which they are applied. This paper explores the structure and features of the HEAS under the planned economy system by applying analytic methods of transaction cost theory. The paper bases itself on comparative and empirical studies and focuses on the rationale and limitations of the reform models. Gongjian and hezuo are the preferred reform models at the current time.

I. Introduction

The reform of the higher education administrative system (HEAS) in China has to adjust to the evolution of the country's economic system. The essence of the reform is to change the mechanism for resource allocation set up in the era of the planned economy system. It focuses especially on the delegation of authority for higher education from central government to provincial governments, on weakening the affiliation of higher education institutions (HEIs) to a particular government agency and on enhancing institutional autonomy and flexibility to meet the needs of economic and social development. The HEAS reform has made a breakthrough after years of experimentation. Four reform models have been set up temporarily, and are used as guidelines for further adjustment of the higher education system. These four models are *gongjian* (joint investment and administration by central and local governments), *tiaozheng* (transferring affiliation of HEIs from central government to local governments), *hezuo* (cooperation between HEIs to share their resources), and *hebing* (HEIs mergers) respectively. By the end of 1999, there were 197 HEIs involved in *gongjian*, 208 HEIs involved in *tiaozheng* and 317 HEIs involved in *hezuo* (Xu and Hao, 1999). *Gongjian* and *tiaozheng* focus on macro-level reforms, the aim of which is to alter fragmentation and to improve collaboration between central government and local governments for the development of higher education; *hezuo* and *hebing* focus on micro-level reforms, the aim of which is to prevent over-specialisation and scale "diseconomy" of HEIs. *Gongjian* and *hezuo* are dynamic processes, *tiaozheng* and *hebing* are static structures. These reform models do not guarantee success or failure. The results of reform all depend on the context in which they are applied. This paper underlines elements that should be considered when choosing reform models.

This paper explores the structure and features of the HEAS under the planned economy system by applying analytic methods of transaction cost theory. The paper bases itself on some comparative and empirical studies and focuses on the rationality and limitation of the reform models. Transaction cost is a key concept in economics and organisational theory. A transaction is the exchange of goods and services between independent technical units. Transaction cost is the cost incurred in the process of a transaction. According to transaction cost theory, transaction cost is determined by the method of transacting. Rational organisations are always searching for effective and efficient ways to reduce their transaction costs. Transactions can take place in two ways: in a market mode or a bureaucratic mode. Which mode is actually chosen depends on the comparison between transaction cost and organising cost. Both *gongjian* and *hezuo* are reforms undertaken voluntarily and they can be seen as operating under market rationale. Both *tiaozheng* and *hebing* take place during the process

of restructuring or reorganising, and they can be seen as operating under a bureaucratic rationale. In this sense, we can use analytic methods of transaction cost theory to study a selection of the HEAS reform models.

II. Transaction cost theory

In 1937, the American economist Ronald Coase initiated the concept of transaction cost in his book *The Nature of Firms*. The concept was used to explain why firms exist and what their limits are. Afterwards, Oliver Williamson extended its application to organisational structure, employment, training, the phenomenon of mergers and so on. The theory of transaction cost has been a key component of institutional economics and a useful analytic tool in organisational theory.

In transaction cost theory, a transaction is a basic analytic unit of organisational behavior. The cornerstone of organisational behavior analysis resides in developing understanding of how to reduce transaction costs. The purpose of transaction cost analysis is to improve management efficiency. It focuses on comparing the efficiency of different structures. Solutions for organisational efficiency can be found by studying the relationship between efficiency and transaction variables. In *Wealth of Nations*, Adam Smith sees market forces as an invisible hand that coordinates the division of labor in an efficient way. It is easy to infer from this principle that a small-sized and family-owned workshop is beneficial to competitiveness and therefore to productivity. But in reality, large modern firms and complex structures replaced family-owned workshops at the beginning of the century as the most popular means of production. There is a discrepancy between classic theory and practice. How can this phenomenon be explained? Alfred Chandler (1987), an American economist, thought it is because firms are more efficient production units when transaction costs are reduced. Williamson used the concept to explain why firms merge. The rationale for mergers is to integrate business functions. It can reduce the frequency of transacting and therefore transaction costs. When transaction costs are lower than organising costs, the open market is naturally selected. When transaction costs are higher than organising costs, bureaucracy replaces the open market. Therefore, whether the open market or bureaucracy is used, or what the limits of an organisation are, depends on the comparison between transaction cost and organising cost. In other words, the structure of an organisation depends on transaction costs and organising costs.

Williamson (1981) thinks transaction cost reasoning has greater relevance for studying commercial rather than non-commercial organisations, since natural selection forces have more influence in the former. But lowering transaction

costs is important to all organisations. Therefore, governance structures with lower transaction costs will eventually replace those with higher ones for any organisations, every thing else being equal. Higher education as a whole is an important sector to which transaction cost reasoning can be applied.

III. The analysis of operation transaction costs of Chinese higher education under the planned economy system

Before China adopted a policy of reform and opening up to the outside world, its economy was organised by a centralised system. Various central ministries were responsible for planning, organising and coordinating economic activities in the country. Through such a complex hierarchy, information flows, and incentive comes true. The HEAS was a component and a tool of economy, and similarities existed between itself and the economic system. In 1952, China followed the former USSR's model by restructuring its higher education system. Specialised colleges were established, and governed by various central ministries or local industrial units. At first, the system promoted China's rapid economic growth. But gradually its problems became obvious, a few of which are listed as follows:

- Fragmentation. According to 1995 statistics, there are 616 HEIs in China that educate to bachelor degree level or above. Among these 616 HEIs, 35 HEIs are affiliated to the State Education Commission (now the Ministry of Education), 260 HEIs to other central industrial ministries, and 321 HEIs to local government agencies. There are a total of 106 government agencies that have responsibilities in supervising a number of HEIs. On average, each government agency supervises 6 HEIs; 25 government agencies supervise only 1 institution; 43 government agencies supervise 3 HEIs or less, and it represented over half of all government agencies.

- 51% of all HEIs were affiliated to industrial agencies, 314 in total.

- Specialised or non-comprehensive HEIs accounted for more than 90% of all HEIs (see Table 1).

- Enrolment was low for many HEIs (see Table 2).

Table 1. **Classification of HEIs by specialisation**

Compre-hensive	Industry	Agriculture	Forestry	Medicine	Normal	Language
58	204	45	10	104	76	12
Finance	Law	Sports	Arts	Nationality	Total	
40	12	13	30	12	616	

Source: author.

Table 2. **Classification of HEIs by enrolment numbers**

Below 1 000	1 000-2 000	2 000-3 000	3 000-4 000	4 000-5 000	5 000-6 000	6 000-7 000	7 000-10 000	10 000 above	Total
35	63	86	67	75	61	48	67	114	616

Source: author.
Note: The table figures are calculated according to the full time equivalent number of undergraduates.

- HEIs were over-specialised, and teaching of all major subjects focused on narrow and specific requirements. Majors were specified according to vocations, positions and even products. Therefore, more than 1000 majors were created decades ago. In the 1980s and 1990s, the classification of majors was revised twice. In 1993, the number of majors was reduced to 504, with a further reduction to 249 in 1998.

- Because most industries and provinces were self-reliant in manpower, they set up their own specialised institutions or majors, even though demand for these was not very high. As a result, there was a great deal of duplication or overlapping between industries and provinces. Among 45 agriculture HEIs investigated, both the Ministry of Agriculture and the local education authority or local agricultural authority established their own agriculture HEIs in the same province. This kind of institution represented almost one quarter of all 45 HEIs (Yan, 1998).

The problems mentioned above were direct results of the planned economy system, which can be analysed from the perspective of transaction cost. In the context of a planned economy, HEIs interacted with their environment through bureaucracy instead of directly through the open market. Bureaucratic barriers

and a limited capacity for information processing and disseminating led to very high transaction costs. Because the administrative sectors wanted to avoid such high transaction costs, they built in the services which they needed from other sectors. For example, some industrial sectors set up a particular medical college for their own manpower supply; the metallurgical industry set up a specialised college of architecture just for its own needs. It is a rational maneuver for a specific sector to avoid transaction costs by creating an internal service and organisational cost. Including logistics, such as food supply, dormitories, transportation etc., within a university, follows the same rationale. HEIs set up many administrative offices within campuses as a reflection of institutional isomorphism. Graduates were assigned specific jobs and had less mobility in their positions. This is the main reason why majors were quite narrow and over-specialised training was popular. From a static and internal perspective, the HEAS had to adjust to the system. But from a dynamic and external perspective, scarce resources were not allocated effectively. It was difficult to transfer or share resources between sectors. On the whole, the HEAS was rigid and reluctant to adjust to dynamic and technological innovation.

IV. Choosing appropriate reform models for the HEAS in an open market system in China

A market system operates in the context of decentralisation and devolution. A free market can change the division of labor and transaction mechanism. It will fundamentally transform the old HEAS. Since *Decision of Educational System Reform* was promulgated in 1985, especially after 1992, great progress has been made in the HEAS reform. HEIs have become more autonomous than before. In 1998, the central government changed its function and structure dramatically. Many industrial ministries were abolished and lost their control over HEIs. This speeded up the HEAS reform. By the end of 1999, more than 600 HEIs were involved in some kind of HEAS reform (Xu and Hao, 1999).

Gongjian, *tiaozheng*, *hezuo* and *hebing* are four options for reform. The former two focus on adjustment of governmental relationships, central government and local government on the one hand, industrial ministries and educational departments on the other hand. The latter two focus on the adjustment of the institutional operation mechanism. The relationship of these four reform models is elaborated in Table 3. In general, application of these four models in combination will shape a new HEAS. But a specific model has to be selected according to certain conditions.

Table 3. **Four HEAS reform models**

	Macro	Micro
Gradual (market)	**Gongjian**	**Hezuo**
Dramatic Revolutionary (bureaucracy)	**Tiaozheng**	**Hebing**

Source: author.

We can make a decision to choose reform models between *gongjian* and *tiaozheng*, or between *hezuo* and *hebing*. When making a choice between *gongjian* and *tiaozheng*, we should first make it clear what our goal is. Then, a new system should be considered, that can provide a good balance between central government and provincial governments, to displace fragmentation with integration. Special attention should be paid to the imbalance of economic growth countrywide. HEIs of good quality are usually well-attended in developed regions. Measures have to be taken to reduce disparities between developed regions and poor regions in terms of manpower supply and accessibility to higher education. A previous study shows that when adopting these two models, poor provinces are constrained by their financial capacity. More than 300 HEIs, which are affiliated to central ministries, are spread over 26 provinces, autonomous regions and municipalities. 8 provinces had 5 or less HEIs; 13 provinces had 11 or less HEIs (Shao, 1997). In Beijing and Shanghai, HEIs are even more intensively located. It is not possible for Beijing and Shanghai to accept all HEIs located in the cities. In addition, central government should make higher education accessible to students from poor regions. At present, the *gongjian* model is highly recommended. With the development of market system, the *tiaozheng* model can become a reasonable solution.

At a micro level, the two reform options are *hezuo* and *hebing*. *Hezuo* is based on a voluntary approach and is an evolutionary process. *Hebing* is comparatively revolutionary and can result in a new structure. There have been many institutional mergers in China. Some are successful, but a lot of them have had poor results. This model is controversial because of heavy government involvement and the reform has no solid research base.

More studies have been conducted for company mergers than for university mergers. Transaction cost theory is often employed to explain company mergers. There are two types of company merger, vertical merging and horizontal merging. Vertical merging can lower transaction costs and buffer the

firm from unhealthy variations in the environment. Horizontal merging can reduce competitiveness and increase productivity through economies of scale.

There are less transactions between universities than between firms. This is due to the nature of university work. There are at least three reasons for merging HEIs:

- to increase enrolment and improve scale "diseconomy";
- to alter over-specialised HEIs into comprehensive ones;
- to ease the burden of governmental coordination by reducing the number of HEIs.

The extent to which these objectives can be reached depends largely on the specific context of each merger. The appropriate scale varies from institution to institution. Overly high enrolment numbers can make communication and coordination difficult. Therefore, it is beneficial to merge small and neighboring institutions. If management is qualified, it seems reasonable to assume that merging will not raise costs and will solve other problems. The ability to process information is a very important benchmark for management qualification. Institutional merging increases information-processing requirement. In addition, decision-makers should be conscious of common culture formation and long-term investment. Institutional merging does not necessarily mean academic integration or reviewing over-specialisation. In order to solve this problem, the emphasis should be placed on the micro-mechanism for interdisciplinary and cross-disciplinary studies and students' all-round development. For the third objective mentioned above, many other options are available. This objective can be reached by delegating authority to institutions and establishing intermediary bodies that can take some responsibility for information exchange and evaluation. This is a common procedure in free market systems.

To sum up, there are some limitations for adopting the *hebing* reform model. First of all, fair conditions are needed for institutional competitiveness. Large scale institutions have an advantage over smaller ones. Secondly, flexibility will be affected negatively by merging. Thirdly, our management is not qualified to merge large scale, distant and different institutions. Lastly, other reasonable solutions can be found in order to reach the same objective of merging.

Hezuo is another reasonable reform model, which can reach the same goal of merging. We can distinguish nominal size from operative or effective size. Martin Trow (1983) pointed out that the operative size of a unit could be larger

than its nominal size if the opportunity cost for the use of resources across institutions is lowered. Trow took Berkeley and Stanford's cooperation as an example. Together, both libraries have 6 million books. Sharing these resources, their operative size is doubled. In this case, free buses are used as a means to reduce opportunity costs. Credit transfer also enlarges institutional operative size. The framework is rigid for funding allocation, but not rigid for academic affairs. Therefore, measures can be taken to reduce opportunity costs and enlarge operative size.

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DIVERSIFICATION OF SOURCES OF FUNDING AND INNOVATION IN MANAGEMENT METHODS IN CHINESE UNIVERSITIES

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ABSTRACT

In China, funding for colleges and universities is changing from a centralised to a pluralistic system. This change has led to new requirements in university management and permitted management methods to be reviewed in Chinese colleges and universities. This study's results indicate that colleges and universities will rely on market competition to a greater extent than before and that the government no longer has direct control over them. Quality management in higher education has been gaining more and more importance. Colleges and universities should reduce bureaucracy, strengthen the influence of academics and students and simplify their hierarchical organisation.

I. Introduction

Since the 1970s, the expansion of higher education and its increasing cost, coupled with the slow increase in public outlays and the worldwide shortage of specific funding has put higher education institutions under considerable financial strain. To deal with such difficulties, universities all over the world have tended to diversify sources of funding by cooperating with industry, providing various products and services to society directly and developing more training programs, etc. Since the mid-1990s, with the emergence of the concept of a "knowledge market", higher education has become the focus of public attention once again. Reductions in sources of funding for higher education have continued, thus requiring adaptation in organisation and management methods in Chinese colleges and universities.

II. From a centralised to a pluralistic system: changes in the structure of funding sources of Chinese colleges and universities

After the reform of colleges and universities in 1952, the single state-owned and state-run model of university management took shape in China and public grants became the only source of university funding. The state government was the only investor in higher education, so that the central and local governments were directly in charge of higher education institutions. In addition to investment, the governments at the national and local levels had full power over such matters as admissions policy, courses and teaching, employment of graduates, etc. Colleges and universities, with limited autonomous rights, were run completely in accordance with the state plan and came to be managed as administrative organisations instead of academic ones. Their internal management systems also followed the administrative model.

There was a move to diversify sources of funding for Chinese tertiary education in the 1980s' due to public financial difficulties. Though the overall reform of the economic system led to the rapid development of the national economy at that time, the proportion of state financial revenue in GNP continued to decline, from 32.2% in 1978 to 18.7% in 1990 and 18.2% in 1991. Public spending on higher education could hardly sustain its expansion and the financial situation of colleges and universities continued to worsen. The initially unavoidable choice – encouraging institutions to compensate the shortage of public funding by "making money" – brought about the diversification of sources of funding for Chinese higher education.

The underlying reasons for the diversification of sources of funding are related to reform of the employment system. For a long time, graduates were assigned jobs by the government, worked for the government, state-owned economic departments or institutions and were paid according to a nationally unified salary standard, which was compatible with the resources of a free higher education system. Thus there existed little income disparity between graduates and those who did not have higher education diplomas, i.e., in order to offset the increasing cost of a free higher education for all, graduates salaries were kept low. This sometimes gave rise to negative effects and led to standards at Chinese higher education institutes falling to the lowest world levels.

The overall reform of China's political and economic system started with the introduction of free market mechanisms. The non-state-owned sectors could not attract university graduates and had to incite people with technical skills employed in state-owned departments with higher salaries and better conditions because they had been assigned there as the government had planned. Some students, receiving free higher education but unwilling to accept the low incomes in state-owned departments, took up jobs in the private sector for a higher income. Consequently, the cost compensation mechanism of keeping down graduates' salaries could no longer function properly. With the rapid expansion of tertiary education and the increase in the employment of graduates in non-state-owned sectors, an overhaul of the mechanism became necessary and finally resulted in a diversification of the sources of funding for China's higher education system. This now includes tuition fees, income from sales and services, as well as other funds, in addition to public allocations.

As far as the revenue and expenditure of higher education institutions are concerned, with operating expenses steadily increasing in recent years, tuition fees have become the most important source of funds. A city survey in 1996 showed that a freshman's tuition accounted for 53% of his/her direct educational expenditure and 34% of total individual higher education costs, including opportunity costs. Compared with some countries, the proportion of tuition in both direct individual expenditure and net economic cost has reached a fairly high level. According to a survey in Beijing, the average amount for tuition fees and incidental expenses per undergraduate listed in the national admission plan in the 1998-1999 academic year was 3200 Yuan, 30% more than the average university operating expense per student. At present, the tuition fees of higher education are still rising rapidly.

The sales and services income of higher education institutions is also developing and has been the most rapidly increasing part of their income. Since there are different statistical criteria for this kind of income in different countries and it is described as extra-budgetary revenue in China, the current

statistics cannot accurately reflect the sales and services income level of Chinese colleges and universities. In most key universities in China, public funds represent only 50% or even less of their total expenditure. In 1995, the nation's public budget for higher education amounted to 70.12% of tertiary institutions' current expenditure in the whole country. A large proportion of higher education institutions sales and services income was applied to extra-budgetary expenses.

Table 1. **Proportion of the average tuition cost per student to average current cost** (percentage)

Year	1990	1991	1992	1993	1994	1995
Proportion	2.65	2.22	4.35	12.13	14.76	17.19

Source: 1996 Annual Development Report on Chinese Educational Funds, Financial Division of the State Educational Commission.

The remaining income of colleges and universities, though from miscellaneous sources, accounts for a non-negligible proportion of their expenditure as a whole. But the key sources of funds for Chinese colleges and universities remain at present public funds allocations, tuition fees and income from sales and services.

Table 2. **Revenue of American higher education institutions** (percentage)

Sources	1993-1994			1994-1995		
	Total revenue	Public	Private	Total revenue	Public	Private
Tuition fees	27.1	18.4	42.0	27.2	18.4	42.4
Federal grants	12.3	11.0	14.5	12.3	11.1	14.4
State government	23.4	35.9	2.1	23.4	35.9	2.1
Local government	2.8	4.0	0.7	2.7	4.0	0.6
Private endowment	5.7	4.0	8.6	5.7	4.0	8.8
Educational fund	2.0	0.6	4.6	2.1	0.6	4.7
Sales and services	23.3	23.4	23.2	22.8	23.1	22.2
Others	3.3	2.7	4.3	3.7	3.1	4.7

Source: Statistics Digest of Education 1997, Statistical Center of Federal Ministry of Education.

To make comparisons at an international level, the proportion of tuition fees in the total revenue of a college or university in China has reached a high level, close to or even exceeding that in American higher education. On average, tuition fees and incidental expenses paid by the students will remain the main basis with which to implement mass higher education in China and may amount

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to 50% or more of higher education costs per student. The nature of public higher education means it is likely that public spending on higher education will remain the most important source of higher education funding and will keep on increasing. However, with the rapid expansion of higher education, the level of funds needed for its development will increase even more rapidly. Therefore the proportion of public grants compared to total revenue will keep on declining. Chinese colleges and universities attach great importance to the income generated by their own sales of services and other activities. With the advances in technology, the sales and services income of those colleges and universities with hi-tech characteristics will increase steadily.

III. Bureaucratic methods of control of higher education funding and university management

Gris Williams divided universities into three basic types according to their sources of funding :

- bureaucratically run universities,
- academically run universities
- universities influenced by market forces.

In universities of a bureaucratic control mode, economic decisions are made by external institutions such as the central government and they are allocated educational resources according to the established standard. Therefore, authorities and officials have the power to integrate political considerations into funds allocation.

Thus the bureaucratic control mode embodies the will of the State and helps concentrate state strength by realising its own ideal of higher education by providing resources for it and developing it in accordance with the long term surveys and forecasts on the social needs for skills made by the government. For a university under bureaucratic control, the accomplishment of its mandatory tasks assigned by the government can usually be a guarantee of adequate resources from government. This mode can also help to ensure the essential quality of its students.

The primary disadvantage of the bureaucratic mode is its side effect on academic freedom. In this mode of funds allocation, the lower level of the hierarchy must obey the higher levels so that the conditions attached to government funding of higher education institutions can restrict their manner of operating. Thus the internal management in this type of institution is different compared to that of institutions who receive their funds from other sources.

Firstly, inefficient management and excessive administrative formalities tend to dampen teachers' enthusiasm. Bureaucratic control involves the application of multiple regulations and systems and the allocation of government funds is based on the evaluation of higher education costs.

Thus, cost rises lead to increases in the allocation, which will in turn lead to overstaffed organisations and inefficient administration. Garis Williams pointed out that the recipient of the allocation would generally try every means of pursuing their own objectives without violating regulations. If universities are not strictly controlled, an allocation given for a specific purpose might be used for an entirely different one. But overly strict control might become an unbearable yoke. Since it is difficult to evaluate the output of higher education, the activities of academic staff are controlled instead of their results.

Secondly, a rigid system has little energy. Bureaucratic control based on rules and regulations can hardly work in university management, because the quality of a faculty's teaching and research is far more important than its quantity and depends on teachers' subjective initiatives. Regulations can only control quantity, not quality, and have little effect on the management of academic affairs. What Adam Smith described about two hundred years ago has changed little, i.e. that external jurisdiction could be used both innocently and at will, which was subjective and arbitrary in essence. Those who exert control do not attend classes, nor can they understand the science that a teacher majored in. For this reason, they can seldom exert power properly.

Thirdly, continuously strengthened administrative power weakens academic and student power. The external control over higher education funds directly affects the internal power mechanism. Among the three kinds of basic power within a university – administrative power, academic power and student power – administrative power is consolidated by the external bureaucratic mode of funds allocation, without which it is hard to make universities and colleges obey the external administrative requirements. Therefore external bureaucratic control is usually accompanied by a corresponding internal system of management, in which academic power is restricted and students can have little effective impact on institutional affairs.

The management of Chinese higher education institutions has been under an absolutely bureaucratic control mode for many years. Government officials are in charge of funds allocation and the distribution of resources embodies the authorities' decisions. Colleges and universities are managed as State administrative sectors and their characteristics of management are as follows:

1. Administration-centered system

For a long time, Chinese colleges and universities, run as typical hierarchical organisations, have been run by focusing on administrative power. This the basis for important decisions, not only regarding personnel management, organisation, financial budgeting and daily administrative affairs, but also for such academic affairs as curricula, teaching and research, etc. Professors can only act as consultants while "cadres" in hierarchical organisations are at the very heart of university management.

2. Accepting government interference, relying on government support and neglecting market forces.

As mentioned above, Chinese colleges and universities have been completely run according to the Government and Party's mandates, with little independence of their own. They are obliged to act passively and rely on the government to provide them with the required resources. Though the reform initiated in the 1980s' attached great importance to the autonomy of universities, it is in fact difficult to put into effect. Not only does the government not loosen its authority, but the universities do not want autonomy since it is always accompanied by responsibility. Market-oriented reform in the economy has developed in depth, while colleges and universities are still indifferent to market forces. Almost every innovative proposal causes debate. In fact, the concept of relying on the support of the government is pervasive and many still count on a great increase in government investment in higher education to ease universities' shortage of funds.

3. Non-effective academic power and lack of appeal to highly-skilled people

The concept of the modern university in China was introduced from the west, so there is no tradition of university autonomy and academic freedom in the history of Chinese higher education. It is difficult to put academic power into effect under external bureaucratic control. Even a professor at the grass-roots level of teaching and research cannot affect decision-making if he has no administrative power. Since university teachers are usually professionals with high academic credentials and capable of securing a more highly paid position in other fields, but wish to stay in a university because of its academic freedom and respect for science, universities with no academic autonomy will no longer have much appeal to them.

4. Passive students and teaching that does not meet their needs

Chinese traditional culture emphasizes the obedience of a person of lower status to a person of higher status and the dignity of the teaching profession is highly valued. In universities with a bureaucratic control mode, students have a subordinate status and their organisations have little bearing on university affairs, let alone affect the acquisition of the resources needed by their universities. Teaching is based on forecasts of the need of society for skills and a university's subjective appreciation of students' needs. Students' opinions are invariably neglected.

IV. Market-oriented mode of higher education funds allocation and university management

This mode means that colleges and universities generate revenues by providing paid academic services, with teaching services paid by the students and research services paid by businesses and government. Thus, decisions regarding the distribution of resources are based on student needs and the buyers of research results, who in effect influence the focus of a university. Colleges and universities have to function in accordance with the acquisition of resources in order to meet the needs of the students and the buyers of their scientific results.

A market-oriented mode can give colleges and universities strong incentives to adapt to a changing economy and society and make them more dynamic. The "survival of the fittest" principle will impel institutions to improve their quality of management, as those who cannot attract students and other investors will see their income decrease and eventually face the risk of closing. Within higher education institutions, a market-oriented strategy of management can greatly encourage staff self-development. Market forces can both arouse personal enthusiasm and lead to inequality of income. Under market control, financial aid goes directly to the students instead of to the institutions. Though some disagree, this is helpful in promoting educational equality. The disadvantage of a market-oriented mode is that it may result in decisions being taken without consideration of long-term issues, and this can weaken the basic research traditionally existing in universities, or lead to slow-acting outputs of higher education. If there is no proper macro-management, it may also have poor effects on the quality of teaching and cause vicious competition among higher education institutions.

The market-oriented mode of funds allocation can affect the internal procedure of resource distribution. Since it is always the lower level of organisations that have contact with their "customers", those in grass-roots departments are more

likely to affect the higher level of the organisations, contrary to the power structure of a bureaucratic control mode. The characteristics of university management of this kind are as follows:

1. Higher education institutions are run independently according to market needs and administrative interference is resisted

The choices and decisions facing an organisation depend to a great extent on the origin of its resources and the way these resources are distributed within the organisation. In the market-oriented mode, colleges and universities acquire resources mainly through the market, so they must serve market needs. Public grants for higher education are also distributed by means of financial aid to students and the purchase of research results. The government acts as the buyer who wants to extract benefits from the higher education system and exerts influence on higher education institutions through the level of its expenditure. Any direct administrative interference will be resisted.

2. The opinions of academics are respected and greater coordination between academic and administrative interests is developed

In a market-oriented mode of university management, colleges and universities acquire resources by serving market needs. Both students and buyers want professional teaching, services or research achievements which are controlled by the teachers, so the fact remains that it is by the teachers' work that colleges and universities can generate revenues. In this way, teachers and their academic power gain respect and produce a major impact on decision-making. At the same time, administrative power is limited and must coordinate with the academic power.

3. The students' interests are respected and their needs are satisfied as much as possible

The students are the main providers of management resources in a market-oriented mode of higher education institution. They choose a university because it can meet their needs. To acquire resources from the students, the teaching programs of a university must be based on the students' needs. Within a university, the students should have more opportunity to participate in university affairs and their opinions need to be taken into account.

4. The internal organisations of higher education institutions are simplified and more efficient and greater importance is attached to how resources are used.

Competition is an essential component in a free market. A particular feature of the market-oriented mode of funds allocation for higher education is that institutions compete over resources. Universities that offer the best higher education at the lowest cost will be more competitive and gain more resources. Therefore, higher education institutions will pay more attention to the efficiency of their management, and try to reduce unnecessary expenses. In fact, it can be seen time and again throughout the world that universities entirely funded by the government are usually the most inefficient and that the entirely market-oriented ones are the most efficient.

V. Conflicts and conformity: changes in the university management mode in China

The 1980s' witnessed a diversification in sources of funding for higher education in China, which developed even more rapidly in the 1990s'. Now the pattern of diversified sources has taken shape and raises new requirements on the mode of Chinese university management. The previous mode, based on completely bureaucratic control, could not meet the requirements of the times and the change in sources of funds. Though the colleges and universities in China have made great efforts to reform their management, some obvious conflicts remain.

1. Diversification of sources of funding and government control

The structure of funding sources is closely linked to government control over higher education. It is understandable that the increase in public grants to higher education would necessarily result in strengthened bureaucratic control, because the authorities that provide money for higher education are bound to link the use of the grant in accordance with the government policy. Higher education institutions have to give up their independence to gain government support. When institutions live mainly from the market, this has a great impact on them and the government has to correspondingly adapt their organisation. That is to say that universities will rely on market competition to a greater extent and that the government cannot directly control them any longer. This means the government has to change the way it controls higher education institutions away from purely bureaucratic methods. This means adapting traditional

administrative methods to respect the necessary autonomy needed to cope with a free market approach.

2. Diversification of sources of funding and management of quality in higher education

Bureaucratic control is helpful in ensuring the basic quality of higher education and a market-oriented management mode may result in shortsighted decisions and actions. Since the effectiveness of a teaching program cannot be tested immediately on completion, there may be some universities "selling their diplomas" by lowering the quality of higher education in order to generate more revenues. Therefore, with the diversification of sources of funding, the means of ensuring the quality of higher education has become an important issue for both the macro- and micro-management of higher education.

The traditional mode of quality assurance by strict process is not appropriate when funds arise from diverse sources, since it tends to harm both teachers and students' creativity and initiatives, and is especially unfavorable to fostering creative skills. The ideas, techniques and methods of quality management of higher education are thus changing along with the diversification of sources of funding. Ideally, there should be an independently run intermediary organisation to evaluate the quality of higher education and, in colleges and universities, total quality assurance systems should be set up. Only by a quality assurance system instead of a quality management mode under the single public grants system can the improvement of higher education quality be sustained. There are already some concerns on avoiding the side-effects of market competition to successfully develop higher education in China.

3. The diversification of sources of funding and university admission, diplomas and students' employment

Since colleges and universities acquire their funds by selling their educational services, research findings and other products in the market, as well as from public grants, they have to offer more products, and services of higher quality, to make more money. For a long time, the government strictly controlled admission, teaching and students' employment in China. In recent years, the employment system has changed to become more market-oriented, but admissions and the awarding of diplomas are still decided by the government.

In a context where funds come from different sources, higher education institutions must have the right to regulate their own admissions policy and

award diplomas independently. However, the government will not give more rights to universities until the quality of higher education is ensured. How can more rights be given to universities while, at the same time, control over their quality be reinforced? Higher education institutions could be given the right to set up and carry out the admissions policy. As a condition, there could be independent external organisations to evaluate the quality of teaching and research as well as that of their graduates. The number of diplomas a university awards to its graduates could be limited if it was unable to meet the state requirements of quality and the university could even be deprived of the right to award diplomas if its quality problem became too serious. In this way, colleges and universities attaining appropriate quality standards would be able to take decisions on admissions, award diplomas and provide higher education programs suited to market needs.

4. The diversification of sources of funding and changes in the internal power system of colleges and universities

For a long time administrative power affected the management of higher education institutions. Under bureaucratic control, the fulfillment of state objectives regarding higher education has depended on the internal administrative power of universities instead of academic power. In many cases, the academic power has in fact been an obstacle in realising political aims. The changes in funding channels have pushed the higher education institutions into the market, where teachers holding academic power and students who are "consumers" can have a greater impact on university revenues and therefore on university management. As far as the internal reform of university management is concerned, a university should reduce administrative power, strengthen academic power and student power and simplify the hierarchical organisation of its administrative departments in order to be more efficient in the areas of teaching and research. More university decisions should reflect the opinions of scholars, who not only enjoy academic freedom but also gain broad respect from all staff. Moreover, the students should have considerable say in the decision making of their universities and their demands should be fully met.

The diversification of sources of funding for Chinese colleges and universities has had a far-reaching influence on university management and there are already some achievements in management reform. With its growing development, a new mode of university management will emerge, which will require higher education institutions to review their own management systems to serve market needs. Only in this way, can they obtain a competitive edge in new situations.

THE SITUATION OF EDUCATION FUNDS IN CHINA AND THE ESTABLISHMENT OF A TUITION COLLECTION SYSTEM FOR GRADUATE STUDENTS

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ABSTRACT

The history of graduate student education in China does not go back very far. However, graduate students' education was initiated and developed under socialism in a highly centralised planned economy mode, with a very specific economic objective. The allocation of education resources mainly depends on the government and proceeds artificially. Although such a mode of resource allocation can have good results within a short period of time, it is inevitably subjective. This paper shows how this mode of fund allocation has become ill adapted to the current situation since the introduction of reforms and the establishment of a market economy.

I. Introduction

At present, we are faced with two options. One option is to continue complying with the planned economy mode. The entire burden is undertaken by the state within the budget provision, developing education with the means available. The other option is to widely mobilise social forces in order to maximise economic and social development. Obviously, the latter option should be chosen. Hence, our government has decided to develop education firstly by means of the state financial allocation, and secondly by adopting a policy for fundraising by other methods. For example, one way of collecting education funds will be to charge tuition and miscellaneous fees for students both during the compulsory period and the non-compulsory period. The concept of students paying for their own tuition has already been accepted by the general public. According to statistics, income from miscellaneous fees and tuition in China has become the second source of education funds after the national allocation. This will have an important effect on the development of our education system.

Practice has shown that self-financing students has worked rather well in solving the serious shortage problem of education funds in China.

From 1978 to the recovery of graduate students enrolment in 1984, student enrolment was managed by a centralised national planning system, the corresponding education funding being allocated by the national budget. In 1985, the National Education Committee adopted for the first time a student enrolment planning management system. The measure to enrol graduate students by university was implemented early 1989. All these policies have, to a certain degree, changed the central national student enrolment planning system, which is unable to adapt to real demand, and also requires that graduate education funds be partially funded out of the national budget. Thus, due to the high rate of economic development and the great demand for graduate students, the present system has to some degree hindered the development of graduate education, and does not co-ordinate well with the development of higher education as a whole. Therefore, the tuition collection system must be reviewed. The necessity of a graduate student tuition collection system will be analysed here from several points of view.

Since the opening and renovation of the education system, and especially since the introduction of the ten-year education system reform, our education system has seen brilliant achievements. The level of education in the nation as a whole has greatly increased in terms of numbers receiving formal education. Also, the rate of illiteracy has decreased. The share of students in higher education is growing continuously. The number of students at an ordinary full-time school

increased from one million in 1980 to three million in 1997. Large numbers of highly qualified construction personnel have been trained for the socialism construction cause.

However, the development of our education system still faces many difficulties, especially insufficiency of the education input and the shortage of education funds. These are the main long-standing difficulties that face the development of our education system.

II. Insufficient national education funds

The education allocation of the national budget constitutes more than 60% of the total national education budget, which is the main source of education funding. The proportion of the finance education input to the GNP is used to measure the emphasis degree to the education and as well as an important indicator of the input level by a state.

Statistical analysis of education financing data in China and in other countries shows the following:

- Although the absolute value of the education funding budget tends to increase yearly, its proportion to the finance output has remained around 14% (Table 1). Its proportion in relation to GNP is below 3% and has a tendency to decrease, which is far from the year 2000 4% GNP objective as stipulated by the China Education Renovation and Development Guidelines. Data shows that the input of national education cannot keep up with the development of the national economy. It is hard to be optimistic about the current situation and trend.

- The following data also shows that, when compared with the rest of the world, the proportion of finance education input in China is not only far below the average level in developed countries, but also very low compared with the world mean and the average level in developing countries (Table 2).

There are many reasons for the low level of education input in China. The two main reasons are the attitude of the state and the shortage of funding.

Table 1. **The budget education funds in China to GNP and proportion of finance output**

	1990	1991	1992	1993	1994	1995	1996	1997
Budget education funds (10^8 yuan)	410.35	485.39	566.71	691.58	939.15	1 083.76	1 073. 9*	1 268. 9*
GNP (10^8 yuan)	18 598.4	21 662.5	26 651.9	34 560.5	46 670	57 494. 9	66 850. 5	73 452. 5
Finance output (10^8 yuan)	3 083.59	3 386.62	3 742.2	4 642.3	5 792.62	6 823.72	7 937.55	9 233.56
Proportion of education funds to GNP	2.21%	2.24%	2.13%	2.00%	2.01%	1.88%	1.61%	1.73%
Proportion of education funds to finance output	13.31%	14.33%	15.14%	14.90%	16.21%	15.88%	13.53%	13.74%

*Data from China Educ-ation Funds Statistic Almanac.
Source: China Statistic Almanac 1998.

Table 2. **Proportion of Chinese finance budget attributed to education in the 1990s in relation to GNP in comparison with the rest of the world**

Mean world level	5.10
Mean level of developed countries	5.65
Mean level of developing countries	4.32
Mean level of Asian countries	4.68
China's highest level	2.24

Source: China Statistic Almanac 1995.

For a long time, education in China was considered part of the welfare department, and not as a productive department in its own right. No one thought that education would contribute to the development of the national economy. Such a traditional attitude meant that budget allocations would first go to production and then to welfare. The education allocation was relegated to a

secondary position. Not only was education allocated less, but sometimes it was also in a less prestigious position. Since the renovation and opening of the Chinese economy, the importance of education has been gradually recognised. During the Twelfth Party Plenary Session, education is listed as the strategic key point of economic construction. Comrade Deng Ciao-Ping pointed out that "Science and technology is the primary productive force". The development of science and technology depends upon education. Hence, the strategy "Science and Technology will help the Nation Flourish" is emphasized. However, the traditional concept of treating education as a non-productive department is deep rooted. This makes it very difficult to increase the education budget. Education is still not highly rated on the budget agenda.

Another important reason for the decrease in education input is due to the lack of national finance. Since 1979, the proportion of government income in relation to GNP has continuously decreased, from 20% in the 1980s to 10% in the 1990s. This "pauperisation" means central government has continuously decreased education funding on a macro level. Meanwhile, economic development and reform of the education system are at a critical point. Many projects require very urgent investment. This means short-term benefits will be preferred over investment in education, although the latter can bring long-term benefits to our state. In 1995, the total loss incurred by national enterprises reached 88.3 billion yuan. Despite a new increase in general budget, the government declined to help out national companies. The investment in education has correspondingly suffered.

Education funding in relation to GNP is too low in China in comparison with the rest of the world. Government must rectify this. We cannot use the "Nation's situation" as an excuse for not doing so. However, changing this attitude is a comparatively long process, nor can the deficiency of national finance resources be solved in a short period of time. Therefore, should we wait for the traditional attitude to fade and for the national finances to reach a certain level before solving the problem of the lack of education input? The author's opinion is that the increase of national funding is necessary and reasonable in the long term. While national finances cannot presently satisfy the education development demand, it is absolutely necessary to mobilise social forces by collecting funds in various ways and to cover education costs by alternative means. It is important to carry out studies of students' personal contributions, in order to alleviate deficiency of education funding and to improve education development. At present, high middle school and university education is non-compulsory and students at institutions of this type already follow the payment system to good effect. Therefore it seems reasonable that graduate students, who also follow non-compulsory education, should be included in the same payment system.

III. Serious lack of funds for higher education

Higher education is a professional education that is based on ordinary education (or fundamental education). Its objective is to train different specialised qualified personnel. This qualified personnel, after graduation, will directly enter into different professional fields in society to devote themselves to specialised work. Today, society has already entered what is known as a "knowledge economy". Higher education must have direct links with the development level of the productive forces. With the rapid development of science and technology, economic growth will depend more and more upon the application and new innovations of science and highly trained personnel. The development of higher education will directly relate to the development of the national economy and social construction.

Because of the important support function of higher education to the growth of the economy – to guarantee the objectives of development of the national economy – the higher education system must develop comparatively quickly. But, as with the entire education system, higher education also faces the problem of a serious lack of funds. This situation, to a large extent, restricts its development and indirectly influences the potential development power of the national economy.

Mean fund output per student is an important parameter to measure the situation of education funding. The data in Table 3 shows that the level of mean fund output per student has a comparatively low increase every year. However, after adjustment for inflation, the mean fund output per student from 1993 to 1996 was 4 281, 4 075, 4 581 and 4 932 yuan, and increased only moderately. This clearly shows the lack of higher education funds in China.

Also, the following analysis shows that the present situation of higher education funding suffers from an unbalanced structure. Thus, the shortage of higher education funds is even more serious in relation to that available in other areas.

IV. Unbalanced layer structure of education funding

Total funds available for education are split between higher, middle and primary education. This "layer" structure reflects the rationalisation and a degree of optimisation of the allocation of education resources. The distribution of education resources in China in year 1996 and 1997 is shown in Table 4. From the table we can see that more than 22% of budget education funds were being used for higher education.

Table 3. **The fund output and mean fund output per student of the budget fund for higher schools in China**

	1990	1991	1992	1993	1994	1995	1996	1997
Budget fund output of higher schools (10^8 yuan)	63.6[1]	70.5[1]	87.1[1]	108.6[2]	138.8[2]	186[2]	220.9[3]	256.3[3]
Number of students (10^8 persons)	206.3	204.4	218.4	253.6	279.9	290.6	302.1	317.4
Mean fund output per student in higher schools (10^8 yuan)	0.31	0.34	0.40	0.43	0.50	0.64	0.73	0.81

1. Data from China Education Almanac.
2. Data from Composite Statistic Almanac of Chinese Education.
3. Data from Funds Statistic Almanac of Chinese Education.

Source: China Statistic Almanac 1998.

Table 4. **Distribution of education funds for whole state**

	Higher school	Middle prof. school	Skilled workmen school	Middle school	Prof. middle school	Primary school	Other
1996 Budget education funds (10^8 yuan)	238.16	91.2	8.0	288.32	32.47	340.53	75.23
1997 Budget education funds (10^8 yuan)	276.42	106.15	9.69	347.26	39.29	404.76	85.31

Source: China Education Funds Statistic Almanac.

From the point of view of rational allocation of education resources, the proportion of funds for higher education should adapt to the level of development of the state economy. Generally speaking, the more economic development increases, the quicker the level of higher education improves. With the increase in number of university students, the level of funds for higher education should also be increased. For example, in Japan in 1950, funds for higher education represented 16.2% of the total funds for education, but in 1980, this figure was raised to 20.2%.

At present, higher education funds in developed countries represent about 20% of the total budget for education. For China, the 22% higher education funding figure is apparently higher. This is due to the number of university students among the students of different grade, its proportion is relatively low. Therefore, the input funding to each university student by state, will be much higher than that to the students in middle and primary schools. According to statistics, the mean funding per university student is between 20 to 30 times higher than that per student in primary education (1992, 29.3 times; 1993, 25.1 times; 1994, 21.38 times; 1995, 20.48 times). The state has put a great deal of money forward for non-compulsory higher education, but funding remains insufficient for primary schools. This seems unreasonable. Based on the economic development level in China, state education funds should go to the nine-year generalised compulsory education and greatly encourage professional technological education. Higher education should not take up too great a proportion of the national education budget.

As a result, and due to the lack of higher education funds, in order to realise a rational allocation of education resources, a proportion of funds must be taken from higher education funds and redistributed to middle and primary education. In this way, the lack of higher education funds will be more severe, and the development of higher education will be restricted. In such conditions, by multi-source funding, the input deficiency problem of the higher education can then be solved. Since the carrying out of the fee collection system for the graduate students, the proportion of income from tuition fees to operating expenses of higher education is increased yearly. In 1996, it reached 20% and became an important source of funds in addition to the finance budget allocation, thus, effectively lessening the pressure of the input of state higher education. Charging fees for graduate students is a necessary means of solving the difficulties of higher education funding and would make the distribution of the input of state education more rational and effective. After carrying out the fee collection system for graduate students, the state should transfer a part of education funds to fundamental and compulsory education. Thus the whole resources allocation of education would be more rational.

V. Conclusion

This article has studied three main aspects of education funding in China: the proportion of education funds to GNP, the mean fund output per student of higher education and the layer structure of education funds. It has pointed out that education funds, especially education funds for higher education, are severely insufficient. To mitigate the lack of higher education funds, on the one hand, the state should increase investment in education, and on the other, we should find different ways to collect funds. A graduate student fee collection system is one way for collecting funds, which has its own necessity.

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HOUSING MANAGEMENT IN CHINA'S COLLEGES AND UNIVERSITIES

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ABSTRACT

This paper begins by analysing the drawbacks caused by the long-standing welfare housing system in China's colleges and universities, and puts forward the basic principles of housing management in colleges and universities under the new set of circumstances. Those principles are "to take human resources as the basis", "to maintain sustainable development" and "to adapt to circumstances actively". The paper uses the example of Tsinghua University to illustrate the significant role of housing management in the development of universities, and brings up a proposal to build mobile apartments in colleges and universities.

I. Introduction

The administration of colleges and universities is quite a complex and systematic undertaking, which needs not only support from the whole society, but also full co-operation from various college departments and sections. As an important component of universities' internal administration, the management of general affairs and support services has played a vital role to support and ensure the development of our country's higher education over the past decades. However, there is no denying that, as regards development of reforms, the higher education managing system shows great difficulty in adapting to the changes of surroundings and meeting the needs from within. Therefore the core of the reforms in our country's higher education managing system is to achieve the "commercialisation" of colleges and universities' support services, that is to convert them to paying services.

It is well known that the main difference between university systems in China and in other countries may be the operational mode of support services. In China universities take care of general services. Regardless of advantages and shortcomings, it is impractical to eliminate this function of the universities too quickly since it has existed for many years as an important support function. The key point is how to adapt to the new situation and how to change the function and operational system over to a "commercial" operation, so as to provide service for the development of university more efficiently.

It is not the intention of this paper to discuss the support services work as part of the total administration system, but to state the author's views on the related issues of housing management in colleges and universities in light of the Tsinghua case. Housing management is not only a hot issue about current support services management reform, but it also touches on staff benefits. The key issue is how to achieve a smooth transition to a paying housing system, taking into account the realities of various universities, so as to offer a stable situation to the staff and attract talented people. Thus the reforms can be meaningful to serve the education and research and to improve the education quality and efficiency.

II. Realistic problems stemming from the past

1) The barrier in housing concept

During the past decades a welfare housing system developed, which has profound influence on people's minds. Although in recent years our country has brought forth housing reform regulations, a set of necessary implementation measures are still lacking, which makes it difficult to carry out the "commercialisation" of housing. People still expect to obtain welfare housing from the university. In such a welfare housing system the only way for a couple to solve the housing problem is to rely on the administrative units to which they report. If the administrative unit of one of the partners cannot provide housing, or if both partners in a couple are part of the university staff, then they only have to rely on the university. Such ideas as "waiting for distribution, depending on the university, and demanding housing" have placed a great burden on the university and hindered the process of change over to a university's paying housing system.

2) Conflicts caused by historical accumulation

In the time of planned economy all the basic construction costs of our country's colleges and universities were covered from public national funding. However, since the annual financial allocation was quite limited, the speed of the university's housing construction was very slow, which led to housing problems in the university. It was difficult for the university to meet the national criteria of housing and thus the housing problem becomes a thorny issue left over from the past. Since the mid 1980s financing of our country's universities has begun to diversify, and this has provided favourable conditions to alleviate the university's financial crisis. At the same time, the pace of staff housing construction has accelerated. However, with the rapid development of higher education, a number of newcomers join the university staff every year. The new demands for housing, together with problems left from the past has formed a vicious circle for housing allocation: the pace of universities' housing construction can never catch up with the increase and renewal of staff. This problem has greatly held up the development of universities' staff and disciplines, sometimes even becomes a bottle-neck.

Take the example of Tsinghua University. In the course of "the 8th and 9th five-year plans" we have built more than 200 000 square meters of housing, which has partly relieved the housing problem. However, there is still a long way to go to solve the housing problem completely. By the end of 1999 the university has

altogether 6 956 permanent staff members, including 2 618 senior staff, of whom more than 1 000 are living in apartments smaller than three-bedrooms, and 2 624 intermediate staff, up to 1 500 of whom are living in apartments smaller than two-bedrooms. Because of the low criteria for housing, the housing problem not only affects the stability of the university staff, but also makes it difficult to attract talents. An accomplished young professor of Tsinghua University planned to introduce a professor, who owns a villa in the United States, to work for the university. However Tsinghua could only provide an apartment with one bedroom and one parlour for him. The young professor found it embarrassing to invite the professor and offer him such conditions and he finally gave up.

3) Puzzlement in the course of system transformation

The policy of national housing reform stipulates that the reform intends to turn housing over to commercial type management. Now we are in the process of transformation from welfare housing to paying housing, but people still take a wait-and-see attitude and are sceptical about the commercialisation of housing. As is well known, current wages for our country's teaching staff are still rather low. Since colleges and universities are totally dependent on the State for their financial allocation, staff wages are paid from national funding. An average teacher's monthly income is about 1 000 yuan, including a several-hundred-yuan wage from the national Treasury and the allowance subsidised by the university. As a result, a teacher cannot afford to pay for housing with such low income when commercial house prices are very high. Even the preferential prices for low-income groups are too high for them, considering their income. Therefore there are doubts about the start of the commercialisation of college housing without substantial increase of staff income. At the same time, although people have been well aware of the future direction of housing reform, they are still in the habit of depending on the institution and waiting because of social inertia and changeable policies.

III. Analysis of the basic principles of university housing management in the course of transformation

1) Take human resources as the basis and arouse the interest of the staff

Teaching and research are the core activities of a major university and their development depends on a stable and high-quality staff. How to elicit the

enthusiasm of the staff is of great significance to the development of a university. In the time of planned economy we did not pay adequate attention to bring staff's initiative and motivation into full play and thus dampened the enthusiasm of some. Housing distribution was basically decided according to the number of years of service, without a fair and reasonable competitive system. This situation made it impossible for talented staff to emerge.

Under new circumstances we have to apply the principle of "taking human resources as the basis" in colleges and universities' housing management without any hesitation. That means to have a correct understanding of human value. In the university's activities, emphasis must be laid on human resources by encouraging people's initiative and enthusiasm, strengthening their sense of independence, self-esteem, responsibility, and enabling them to follow the socialist education model with a sense of being in control of their activities at the same time. This principle also means that talented staff should be trained, nurtured and appointed. Well known educators and scholars must be invited and provided with a favourable environment to bring their talent to full play. A system of competing for posts and allowing a certain degree of mobility can be beneficial to build up a staff team with high quality, proficiency and efficiency (see Jiang Chongkuo and Zhang Qiming, "Take human resources as the basis and build the first-rank university in the world" in *Research of Education in Tsinghua University*, April 1999).

2) Be practical and efficient to achieve the sustainable development of the university

In the time of planned economy we formed a huge service and managing team, and expanded the construction area and scale every year. However, the housing issue still produced stress and the inadequacy of support services and the tension between insufficient housing and the increasing staff number became more and more serious. Thus general affairs and service became a heavy burden for universities and functions of universities became more and more complex.

One of the important reasons is that we lack the sense of maintaining high efficiency and sustainable development. It is no exaggeration that funds and lands are scarce resources for any university at any time. Even American universities with several billion dollars annual income may be lacking funds. Therefore it is impossible for our country's universities to ensure their development with such limited resources. The university construction never ends whereas resources are limited. The historical mission of welfare housing has come to an end. Welfare housing which originated when we had no alternative is an unsustainable mode. Basically, the social reform of colleges

and universities' support services is a great change of universities' teaching mode and functions, which enables universities to concentrate their funds and resources on education and research. Thus it can provide necessary conditions for universities sustainable development. As an important component of support-services reform, housing reform mainly intends to lead the staff housing issue to a positive condition to be able to introduce excellent talent while sustaining the existing staff.

3) Adapting actively to circumstances

Since the opening and reform policy was carried out, great changes have taken place in the social environment of our country's colleges and universities. Universities, no longer the ivory tower removed from society, have come to the mainstream of social development. With universities involved in social life and social development they are submitted to increasing demands for reform of higher education system. Reform of support services in particular should come before other reforms in order to actively meet the demands of social and educational development and make appropriate adaptation in accordance with the change of social situation and demands. In recent years, regulations regarding future housing policy reform have been laid down by the government, and housing as part of a welfare system has become a thing of the past.

Under such circumstances, support services administrative sections in colleges should take the chance to push housing policy reform forward: on one hand, attention should be paid to advertise and make the national housing policy well understood by the people; on the other hand, the colleges should try their best to find more housing resources, make full use of the existing housing and create more.

IV. Taking good care of housing administration to serve for the construction of first-rank university: the specific case of Tsinghua

Aa a well-known university, Tsinghua has trained a number of talents for the construction of the state in the course of almost a century of existence. Even in such a major university, the staff housing conditions are rather unsatisfactory under the system of welfare housing. Since a few years, Tsinghua has aimed to become a first-rank university, which cannot be accomplished overnight but needs attention and support from the whole society, and also full co-operation and long-term striving on the part of the staff, students and departments. As an important part of support services, the housing section is also faced with the question of how to contribute to the construction of a first-rank university. The

problem is how to deepen the understanding and housing reform, adapt to new situations and ensure the key programs. Considering the current situation at Tsinghua and the principles analysed above, the following reforms are under way.

1) Breaking away from the usual practice of basing priority on the number of years of service so that young teachers and mainstay teachers can get preferential treatment for housing, thus creating conditions favourable to encourage new talents

To attain the goal of building a first-rank university, all the work in the entire university has to serve that goal. A first-rank university should have first-rank staff. The concrete work of our housing section is to improve staff's housing conditions and help solve their problems. As to those young mainstay teachers, because of their short term of service, according to the past housing distribution system they would be in the disadvantageous position, and this could affect their moral and sense of initiative. To try to solve young mainstay teachers housing problems and also take account of other staff's benefits, the university makes great changes to the old housing distribution rules to give preferential treatment to young mainstay teachers. At the same time we increase investment in housing construction. Just during "the 8th five-year plan" we built 900 units of single-room apartments to alleviate the housing problems of young teachers. Since 1993 there have been more than 2 000 young teachers moving into these apartments. To make sure that teachers with sub-senior titles and some young mainstay teachers can move into double-room apartments we classify teachers and other staff into two categories, thus satisfactorily solving the housing problem of young teachers while guaranteeing stability to the teaching staff.

2) Activate potentiality to ensure housing conditions for new talented staff

With the development of education at Tsinghua, new academic fields come into being continuously and existing fields need upgrading and improving at the same time. One of the important bases to serve this development has been to introduce high quality talents from home and from abroad. How to ensure good housing conditions to the new staff is certainly an essential element of our housing management. To meet this goal, while distributing housing we will reserve some for "introduced talents" in advance so that they can receive appropriate housing.

We try hard to limit the problem for "introduced talents", especially for the academic fields on which the university lays emphasis. For example, in recent years the university has introduced many new talents in the fields of liberal arts and science. Just for the School of Law there are already more than 20 new staff. In spite of limited housing possibilities we basically meet their demands for housing. It is stated by the School of Law that the work of housing section has greatly helped the development of the school. Certainly the sole measure of reserving houses for "introduced talents" cannot satisfy demand. We have to activate potentiality to guarantee good housing. For example, we have introduced housing regulations for staff moving away and going abroad, whereby we apply the rule that guarantees housing, and try our best to persuade the staff who will not come back to return the houses. From 1997 to 1999 we took back 146 units, which has greatly helped to relieve the housing problem.

In addition, in line with our county's housing reform and previous experience of other countries, we plan to build mobile housing units to serve mainstay teachers.

With pay housing being put into effect, the housing section of the university will focus on the housing of mainstay talents. Since we will keep introducing new high-quality talents in the process of constructing first-rank university, and staff mobility will increase, the existing housing policy, which allocates housing on a permanent basis to staff entering the university, is not only harmful to normal professional mobility, but also may lay great pressure upon the housing system. Therefore, we should plan transitional housing for mainstay teachers and establish a system to ensure the turnover of apartments.

In summary, the management of support services for colleges and universities has to serve teaching and research. It must adapt to changes and reforms. The aim is not only to form a stable and high-quality staff, but also to promote appropriate mobility of talents.

HOW UNIVERSITY RESEARCH AND INDUSTRY SHOULD CO-OPERATE AND PROMOTE NATIONAL ECONOMY

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ABSTRACT

The world today is in a new era of knowledge economy. The ability to innovate in knowledge and technology has become a key factor in global competition. As a developing country of great importance, China is expected to modernise agriculture and industry, make advances in high technology that help to promote the national economy, and secure the development of society. Chinese universities, especially first-class ones, have historically been highly regarded in society. This is entirely the result of national conditions. Most skilled people are gathered in universities and research institutions. Therefore ordinary firms, especially small and medium sized ones, lack a workforce able to absorb, digest and develop new high technologies. This means that universities must deeply review the nature of their role. Universities are needed not only to train creative high quality personnel and bring scientific achievements to a high level, but also to create new technology, to translate knowledge into productivity and finally, to enable the development of both the economy and society.

I. Introduction

The relation of scientific research to the economy and the co-operation between universities and industry are new since China's open-door policy and they are also a world trend.

Universities should pay close attention to pure research that is the basis of creation in science and technology. Some research universities are important centers for pure research, most of which can claim many epoch-making achievements. Universities are more and more geared towards the national economy, starting from market needs to develop practical technology for R&D on a large scale and reach great achievements. However, in the long term, universities cannot make full use of the scientific achievements, whilst millions of small and medium sized and firms remain in urgent need of advanced technology. Therefore, scientific research and development must adapt to the needs of the economy and society, which contribute to the promotion of the Chinese high technology industry and the transformation of traditional industry. The development of society requires universities to be not only a place for the transmission and creation of knowledge, but also a base for transforming scientific achievements into productivity and incubators of scientific and technological businesses.

Tsinghua University is trying hard to further an effective approach to unite firms, science study and research work, and has done a lot of work in this area.

In recent years, Tsinghua University has increased its investment in manpower and in scientific research and this policy has borne its fruits. By the end of 1999, the university had won 272 national prizes, 1 744 provincial or departmental prizes and 1 208 specialised prizes. At the same time, the university developed good co-operation with industry and was very successful in adapting scientific achievements. About 30% of the patent technology and 60% of the scientific achievements has been applied at different levels. 10% of the scientific achievements have made good profits; some of them benefited the development of both the economy and society. Furthermore, the annual speed of growth for scientific research funds is up to 20% in the university.

Up to now, there have been 238 scientific achievements in Tsinghua University that have added annually more than one million yuan tax or over 10 million yuan profit for the firms.

The coordination of science research and industry has been conducted in the following ways at Tsinghua University by:

II Establishing a "Co-operation Committee of Tsinghua University and Industry" to strengthen co-operation with companies

In 1995, Tsinghua University established the "Co-operation Committee of Tsinghua University and Industry". At present, there are 103 member companies from inside and outside co-operating with the committee. The committee is a bridge connecting the university and the companies. It provides services to industry relating to scientific achievements, information, consultation, personnel training and so on. The university sends special liaison persons to the companies. The committee promotes the transformation of scientific achievements into productivity by taking part in technical reforms and brainstorming projects, and establishing the research base together with the companies. For example, the technology of the slant-hole tray column developed by the university was applied in the Yansan chemical company. It rebuilt 20 distillation columns and is expected to bring in 85 million yuan profit annually.

III. Establishing co-operation with the government to contribute to the development of local economy

In recent years, Tsinghua University has signed many documents in co-operation with over 40 local governments from Beijing, Hebie, Shangdong, Yunnan, Liaoning and so on. The documents ensure long-term and overall co-operative relations with the governments, and bring scientific achievements to companies in these cities, provinces and areas. The scientific achievements concur with local plans for economic development. There is a direct need for them and funds are specially attributed, thereby warranting a high possibility and success rate of the application. For example, there are more than 200 co-operative projects with Hebei Province. Among these projects, over 20 projects add 10 million yuan tax annually. The vacuum glass tube for collecting heat with solar energy is another product elaborated in co-operation with Beijing city. The technical norms of the product reach advanced world standards. The product can produce 7.5 million a year which represents the highest output in the world. It is expected that by 2001, the total market income of the product will go up to over 500 million yuan.

IV. Establishing bases for R&D with regions and companies

At present, Tsinghua University has about 40 bases for R&D with regions and companies from inside and outside. The Beijing-Tsinghua Industrial Development Research Institute and the Shenzhen-Tsinghua Research Institute

have been two important bases for industrial reform and the progress of high technology in the two cities.

V. Establishing "Risk Funds for Scientific Investments" to promote the application of scientific achievements

One of the main reasons for the low rate of application is that there is no perfect mechanism for scientific investments with risks. Funds for the development and operation of scientific investments are in serious shortage. In recent years, Tsinghua University has tried hard to establish risk funds with the regions. Now, it has more than 10 different funds for scientific investment with a total of over 100 million yuan. The funds helped 10 scientific achievements to be applied and made a good profit. For example, the quartz resonator force sensor project sponsored by the funds gave rise to production lines in Shenzhen that could produce one million sensors and half a million electronic scales per year. The output has been sold to 36 countries overseas.

VI. Developing university-managed high technology companies

Universities serve the national economy by providing knowledge, personnel and information. This can be done in many ways. One way is to let universities take part in the establishment of high technology companies. In order to help the economy of the capital Beijing progress, Tsinghua University is adding a science and technology department to the south of the university. 100 000 square meters completed in the first period of the construction have already been put into use. Many national engineering research centers in Tsinghua and high technology companies have moved to the site. In addition, investors from inside and outside have also begun setting up high technology firms there.

To develop university-managed high technology companies, funding them is a new and specifically Chinese idea. At present, there are more than 20 companies in the form of proprietorship, holding companies and joint companies at Tsinghua University. They are generally engaged in the application of scientific achievements. The achievements to be developed represent about 5% of the total applied achievements of the university. In recent years, the income of the companies has increased rapidly, which shows the vitality of scientific companies. The overall operating income rose from 480 million yuan in 1993 to 3200 million yuan in 1999, and profit rose from 70 million yuan in 1993 to 360 million yuan in 1999.

VII. Taking advantage of the high technology in universities to set up a scientific information network

Tsinghua University has established a "Science and Technology Co-operation Network for Chinese Universities" under the direction of the Ministry of Education. 36 Chinese universities are members of the network. With modern technical means, it works as a bridge connecting universities and companies, exchanging information in real time on the scientific achievements of a university and the needs of a company, and encouraging the application of those achievements. At present, the network has collected 10 000 scientific achievements in over a hundred universities. The information is available countrywide and is helpful to businesses, especially small and medium sized ones.

To sum up, a research university needs not only to pay attention to basic research and applied research to create great scientific achievements, but also to attach importance to research that is geared to the needs of industry, the market and economical development. The research work of universities will maintain its vitality if it is included in the larger cycle of the national economy and social development. With the increase of activities concerning reform and opening up, universities will most certainly become the national base for the innovation of knowledge and technology. They develop the knowledge-based economy, promote the application of scientific achievements and help high technology industries progress.

AN ANALYSIS OF INNOVATION IN CHINESE HIGHER EDUCATION ADAPTABLE TO THE NEW ENVIRONMENT

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ABSTRACT

This article argues that drastic changes have taken place in the organisational environment of our higher education. These changes stem from both the substantial alteration in the macro-environment, including that of the political and economic system, and of the micro-environment inherent in our education system. Meanwhile, the operational mechanism of these institutions, with the extensive application of network techniques and computer technology, has also undergone phenomenal transformation. With all these revolutionary changes in the organisational environment, our institutes of higher education have to learn to adjust to new systems. However, most of our colleges and universities, except for some prestigious ones, unfortunately still maintain the outdated mode of academic organisation and bureaucratic administration, which is a product of the planned economy. This article discusses the major reforms facing Chinese institutes of higher education in terms of their academic and administrative organisation.

I. Introduction

A major aspect of organisational theory involves studying how an organisation changes and develops internally so as to retain its vigor and vitality. A sound organisation, like a healthy man, has to work to sustain itself. It maintains its vigor and vitality on condition that its leaders take concrete measures and strategies in relation to the changing environment. Otherwise, the organisation will inevitably be affected by "organisational arteriosclerosis", or its development will be endangered. Since the early 1980s, great changes have taken place in the macro- and micro-environment of colleges and universities, and their internal organisation must innovate accordingly, or they will go downhill. It is a pity that only a few key universities can respond relatively quickly to the changes in environment and that most schools still follow the organisational system of the 1980s. As a result, problems such as overly large administrative departments, overstaffing, confusion over responsibilities, low efficiency, disjointed organisation, etc. are common. It is said that reforms in the social environment call for similar actions in the higher education organisation system.

II. A legacy of the planned economy

The present academic and administrative organisation of Chinese colleges and universities is based on a 20 year-old model, or even on the former Soviet Union model. In terms of academic organisation, we followed the former Soviet Union model and set up many mono- or multi-disciplinary colleges as well as 10 comprehensive universities. These colleges chose their special fields mainly to fulfill the needs of the product economy. These special fields, which originally covered a narrow range, were then subdivided into many different branches. One discipline was therefore often split up into many. In 1984, there were as many as 1 039 disciplines in our higher education system. Even after the 1984 adjustment, there were still 797 subjects. This meticulous division only led to the expansion of the academic organisation of higher education. As a result, more and more faculties appeared. A research group was then divided into many subgroups. Though this type of academic organisation met the need to develop the product economy at that time, the following drawbacks also appeared:

1) The goal of cultivating talented personnel is limited to producing experts in a particular field and is detrimental to the development of students' abilities overall. Therefore, students confine themselves to what they have learned, and have difficulty changing jobs according to the economic development and their own interests.

2) This carefully divided academic organisation often lacks unity. The meticulous division seriously affects an environment where disciplines can develop and coexist, and builds up artificial barriers between disciplines. This is not beneficial to cross-sectional or interdisciplinary studies, and does little for joint efforts to solve significant social or scientific problems. This kind of organisation cannot fit into the highly divided and highly inter-related trend of modern science.

3) The elaborate division of academic organisations means there is a duplication of administrative personnel. Each institution has its own teaching and research equipment. This not only results in a great waste of manpower and material resources, but also lowers the efficiency of institution management.

Though this kind of academic organisation was the product of a planned economy, it can still be found in many universities and colleges of our country today. For example, one famous university separates its economic majors into four different colleges, departments and research institutions. The same problem occurs with philosophy, as Marxist, Western, and Chinese philosophy all belong to different colleges and research institutions. This problem is pervasive in Chinese higher education. Many schools have managed to put an end to this abnormal organisation, but there has been no substantial breakthrough. These are only alterations to the former Soviet Union mode of organisation.

As for the administrative organisation, basically most colleges and universities adopt the so-called "directory-functional" pattern. This pattern separates administrative personnel into two types: direct leaders and administrative personnel. Direct leaders, such as presidents or chairpersons, are responsible for all the administrative work of the schools and departments. They are also entitled to supervise their subordinates. The functional administrative personnel, such as the deans of each functional department, are advisors to the management personnel, not direct leaders.

This kind of organisational structure has certain advantages. Not only can it vest leaders with concentrated authority, but it can also bring the specific administrative role of functional organs into full play. This kind of administration suits the needs of modern colleges and universities. It is massive in scale, complicated in the arrangement of majors, detailed in the division of work, and professional in its competence. This is the theoretical understanding. However, all is far more complicated in reality because higher education institutions in our country adopt a principal responsibility system under the leadership of the Party Committee. In other words, as well as the administrative organisation, there is a Party Committee. Each has a separate organisational system. The administrative mechanism alone consists of 10, or even 20 departments and offices, under which there are at least two or more sections.

Each department engages in academic research and administration, such as personnel, finance and students' affairs, at the same time. Therefore the department accordingly sets up a separate administrative organisation.

The Party Committee in universities is also very complicated in design. Basically it can be regarded as a duplicate of the central or local Party Committee. However large a school is, it will set up a mechanism like the office of the Party Committee, ministry of organisation, publicity department, United Front Work Department and commission for inspecting discipline, etc. In addition, there are mass organisations such as youth leagues and trade unions. This type of organisation for higher education intensifies its complexity. The two parallel organisational systems are products of a planned economy. There is no doubt that they have played a very important role in the administration of schools for higher education. However, with the ever changing organisational environment in colleges and universities, more and more insuperable shortcomings are becoming evident in this kind of organisation and are manifest in the following ways:

1) There is a lack of distinction between the functions of the party and those of the principal organisation. In theory, the Party Committee sets out principles for the higher education management system, whose responsibilities are regulated in great detail in the relevant documents from central government. In practice however, the distinction between the two systems are blurred. Problems in schools or departments cannot be solved unless the principal and the secretary of the Party Committee, or the deans of each department and the secretary of each branch Party Committee are on good terms, or unless it is easy for them to reach a common agreement. Otherwise, numerous points of contention will crop up. Sometimes important decision-making will be delayed, or opportunities for development will be missed.

2) The complicated set-up and ambiguous responsibility system between organisations means it is difficult to coordinate different sections. Each organisation is likely to shrink from its responsibilities and pass the buck to others. The working efficiency is therefore greatly lowered.

3) This kind of set-up overemphasizes the management function of the administration, while ignoring the independent role of the academic organisation. Academic management is often superseded by administrative management. Scholars in such organisational structures lack initiative and freedom to explore their own academic field. It is also hard to bring their enthusiasm and creativity into full play. Therefore, the system becomes detrimental to cultivating and producing top quality personnel.

4) The functional systems remain to be improved. If we look over the entire administrative mechanism in our country, though there are many mechanisms, though the executive system is relatively sound, it lacks a supervising consultative feedback system. It is slow in transmitting information and inefficient in handling problems. Hence there is no unified system. Some institutions even adopt a form that links the Party committee with the leading organs. This kind of organisation has two names, or its leader is in charge of both the party affairs and the administration of the institution. On the one hand, this pattern will blur the functions of different managing organisations, and throw management into great confusion. On the other hand, the management system will be incomplete. The conducting mechanism also shoulders the responsibility for execution and supervision. The result is that it cannot really execute and supervise and give feedback at the same time. It will inevitably lose the supervisory and feedback function. Efficient management cannot be achieved.

III. General reforms and their impact on the organisation of higher education

Since the 1980s, with the development of science and technology, our country has made reforms in the fields of economics, politics, and science and technology. The educational system was correspondingly reformed. Therefore the internal and external environment for higher education has undergone significant changes, which calls for corresponding reforms in its organisational structure. Below are the basic requirements for reform in the educational system:

1) The development of modern science leads to the division of modern subjects. This precise division and the earlier influence of the former Soviet Union caused the internal expansion of schools for higher education. New subjects, new majors are added to the school curriculum. On the one hand, the overall size of these schools is enlarged, while on the other hand, the average importance of each subject in the schools is falling. Nevertheless, the development of subjects does not only show its trend towards division, but also a move towards being highly comprehensive. In order to make full use of educational resources, to improve the efficiency of running schools and to suit the trend of being comprehensive, academic organisations in schools should break down barriers between subjects, try to achieve a whole. This is the only way we can improve the efficiency of institution management and promote the development of subjects. Now that economic reforms are moving towards a market economy, college graduates are required to have more general skills. The traditional educational system can hardly meet the needs of a market

economy. It must broaden the range of students' skills, and make them more competent, invincible in a challenging environment. This also requires inevitable reform in the academic organisation of higher education.

If we go through the history of education, we find that each educational revolution took place at the same time as a revolution in society or educational technique. For example, the art of printing and papermaking technology made education more broadly available to the population. Since the 1980s, the technical environment of higher institutions has been greatly changed by information technology, especially by computer network technology. In developed countries, interconnecting national computer networks for education and science research are continually being established, thus creating a worldwide academic Internet. This speeds up information exchange, creates a totally new academic net environment for both teachers and students, and changes ways of working. It also benefits the reform of systems and changes the functions of branches. The China Educational and Research NET (CERNET) is fast developing. It covers every province and city, and links hundreds of universities and colleges. The CERNET is not only transforming traditional teaching methods and traditional teaching organisation forms, but is also challenging traditional university or college management.

Because of this Internet environment, the communication between higher institutions and higher authorities, intercollegiate and international exchange becomes quick and prompt. What is more, traditional space distance no longer greatly impedes work effectiveness, for managerial work such as enrolment, distribution, routine work, rear-service, can be dealt with on the net. We have already opened an information net for graduates, and we have enrolled freshmen through CERNET since 1998. The establishment of an intercollegiate net makes it possible to extend the scope of control of leaders, to simplify administrative procedures and reduce numbers of staff. Traditional one to one teaching is no longer the best, because on the net the source of information can be shared by students from different majors, levels and classes.

2) The significant reform that is taking place in higher education changes the micro-environment in which universities and colleges exist. After the mid-1980s, reform of the higher education system was initiated, influenced by the reforms in the fields of politics, economics and science and technology. The focus of the reform is to urge traditional higher education to move away from a planned system to a new market system. It therefore involves revolution in the macro-system, such as the college handling system, management system, graduate distribution system, financial allocation system, as well as revolution in the micro-system within colleges that have a centralised personnel distribution system. The micro-system reform, which requires exploring

potential ability, reducing staff but increasing effectiveness, involves a change in the structure of organisations. Since the mid-1990s, more significant changes have been made in order to improve the quality of colleges and departments. They have not only altered the former distribution of colleges, departments and majors, but also separated some colleges from their previous administrative ministries to associate with other colleges or ministries. These reforms are certainly a profound revolution because they put the reorganisation of colleges and universities into question again.

IV. Reform and optimisation of colleges of higher education

Changes in organisation often open up a dilemma: on the one hand, in order to preserve a competitive edge, an organisation hopes to be changed, adopts effective technology and methods, and keeps in tune with its environment; on the other, an organisation always works against reform because it wishes to maintain stability and predictability. Higher education organisations are sure to go through this dilemma. However, an organisation that does not evolve will be found to be in utter disharmony with its environment, and it will decline, or even disappear. Before the reform and opening up period, it was possible for our higher education organisations to exist for years, even decades, because we were faced with a closed and relatively stable environment, and little change. But in the past twenty years, higher education has been faced with a mobile environment, with sharp changes. The revolution and optimisation of organisation have been an essential issue in higher education reform in China. I propose, along with the general trend of higher education reform and the new environment surrounding higher colleges, that the renovation and optimisation of higher colleges be carried out in the following ways:

1. Follow the trend of slim-lining majors, build up the college system, and improve the efficiency of institution management

Several years ago, some of our main universities introduced a college system, that involved developing the new feature of majors, setting up a three-level university-college-department management system, combining related majors, breaking down barriers between majors, sharing resources, preventing duplication, enlarging the service scope of majors, and widening major caliber. Especially for those universities that have large scales and all-round majors, we think that the introduction of a college system is the essential way for them to optimise academic organisation and increase school management efficiency.

Take Peking University before the reform of the college system: it had about one hundred organisations such as school, department, institute, and center, for

all of which the university was directly responsible. Management had too large a span to cover. This situation meant attention was poorly distributed, and led to the exhaustion of the main leaders, who could not concentrate on main affairs and the overall situation. It led to weak administration and low efficiency, and even made Peking University lose its overall advantage and potential. Furthermore, the development of new major orientation was limited. In the light of this experience, the university carried out the three-level management system reform on an institute basis, and greatly adjusted its subject distribution.

Tsinghua University also set up eight major colleges by subject rearrangement, which not only strengthened the communication between close subjects, but also reduced the number of grass-root administrators and improved the efficiency of school management.

Up to now, such prestigious universities as Xi'an Jiaotong University, Tianjin University, Shanghai Jiaotong University, Xiamen University, and Sichuan University have adopted the college system. To implement the college system does not only mean changing the form of an organisation. Its key is to give the colleges more substance. The universities should delegate some authority to colleges. Also departments should restrict their activities to their main duty of teaching and researching successfully, and leave administrative authority to colleges. But that does not mean that all higher colleges should implement a college system, whose introduction should be guided by the essential principle of improving efficiency and strengthening subject construction. It is important for those higher colleges on a smaller scale and with a single subject to catch up with the opportunity of our higher education system reform, rearrange its own subject through combination and incorporation, build up a subject group, and found a good environment for subject coexistence.

2) Make the most of modern information technology, and take substantial steps towards the renovation of administrative organisation

In the last 20 years, no effort has been spared to simplify administrative structure and improve the efficiency of school management. For a long time, as with state organs, the administrative organisations of our higher colleges had complete ministries and departments, sections, and a huge full-time administrative staff, which meant a large proportion of manpower resources were idle. Poor organisational control and a hierarchical organisational structure are a result of a high degree of centralisation. But it is the origin of all the malpractice in the administrative management of our higher colleges. According to historiography, the flat organisation form, which has few levels of management and a large field of control, fully encourages the positive attitude,

initiative, and creativity of subordinates, and improves working efficiency. Therefore, the leading orientation of the innovation of administrative organisation in our higher colleges will tend towards an organisation structure with simplified levels and adequate powers of control.

I think that a higher college is mainly an academic structure and that it should have a wholesome academic organisation, but that its administrative organisations have no need to imitate state administrative departments. As fund sources are now multiple and following our reform in higher education financial fund allocation, the planned economy days when higher colleges depended completely on state finance have gone forever. Higher colleges have to look for new fund sources, economise on expense, improve the efficiency of school management, which forces us to reduce faculty numbers.

As we pointed out at the beginning of this article, with the development of science and technology, office automation in higher colleges has been greatly improved. The introduction of campus networks and Internet has greatly increased the speed of information transfer, which makes it possible for higher colleges to simplify their organisation and transform the function of administrative structures. It has been reported that some of our main universities have carried out this attempt effectively. For example, the administrative staff numbers have declined by 35%, from 450 to 290, at the Central China Scientific and Engineering University; administrative organs of departments have dropped by 25%, from 33 to 26, at Wuhan University. These figures indicate a very large potential of developing efficiency in higher colleges.

In addition, how to strengthen the independence of academic organisations in the reorganisation of higher colleges is also a reality we must face, because with the extending of external academic communication of our state, the criteria of international academic organisations has a great effect on our own academic organisations. We should apply international academic management systems as well as assure Chinese characteristics. During the gradual process of a multiplication of higher education management patterns in our state, we should give a clear status to the independence of academic organisations.

In general, the environmental factors of organisation renovation in China's colleges for higher education have been mature and the organisational reform has obtained very good results in a few main universities. But the resistance to organisational reform in colleges for higher education remains strong, and it is still difficult to predict its development trend. However, our reform will continue to aim for efficiency and quality, and move towards the flat organisational form.

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INTERNATIONALISATION: A CHALLENGE FOR CHINA'S HIGHER EDUCATION

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ABSTRACT

The concept of internationalisation in education is not only an ideal but has also been put into practice in universities throughout the world. With their differing political systems, economic situations and cultural traditions, countries will be faced with a variety of problems and challenges, and they will have to adapt the process of internationalisation accordingly. This paper presents a discussion of the internationalisation of higher education in China. Some important interrelated concepts such as internationalisation, globalisation, westernisation, diversification and the adaptation of indigenous culture ("indigenisation") are introduced and discussed. The main challenges and problems Chinese universities may face in the process of internationalisation are outlined. It is argued that China is at a disadvantage and has to face more serious cultural conflicts and more intense competition for knowledge and qualified personnel than elsewhere. Therefore, Chinese universities should be more receptive to outside ideas and broaden the horizons of their faculties and students. They should also carry out educational reforms and improve the

quality of education. They need to improve the flexibility of their policies and expand exchanges with foreign countries. In addition, they should be academically tolerant and open-minded. Only in this way can higher education in China become more adaptable and more competitive.

I. Introduction

In higher education today there is a global tendency towards internationalisation. The concept of internationalisation in education is not only an ideal but has also been put into practice in universities throughout the world. With a history dating back thousands of years, China has a unique cultural tradition. Higher education has an important role within this cultural and historical process. History and tradition are still important factors influencing the development of higher education of China. How will China's higher education system respond to the powerful wave of internationalisation? What role will traditional culture play? What problems and challenges will emerge? How should people solve these problems and meet these challenges? These issues are of great importance for the development of China's higher education in the 21st century. It should be noted that although internationalisation is unavoidable, different countries with their specific political systems, economic situations and cultural traditions, will be faced with problems and challenges particular to each, and they will take various measures in the process of internationalisation. This paper presents a discussion of the internationalisation of higher education in China.

II. Basic values and concepts concerning internationalisation

Internationalisation is a concept with no precise definition. In a broad sense, internationalisation is a process of perfection, the basic characteristic of which is exchange among countries. It is a dynamic process rather than a result. Internationalisation symbolises great advance in man's understanding of the relationship of co-existence between human beings, and between man and nature. With the progress and development of society, human beings have more and more mutual interests and have to make joint efforts to face various crises and challenges. Although contradictions and conflicts still exist, people's attitudes towards these and the way they try to settle them have changed. That is the purpose of internationalisation.

The political and economical situation of the world has undergone great changes over the last decades. People have come to understand the world in a

new way. The peoples of the world need to make joint efforts to promote the progress and development of society; all nations, big or small, rich or poor, developed or underdeveloped, are equal; all races and all kinds of cultures should be respected; international exchange should be based on equality and mutual respect and should be a two-way process; people should not only help their own country develop at the quickest possible rate, but they should also consider and facilitate the development of other countries. Furthermore, they should take the future of coming generations into consideration. These values are playing an increasingly important role in international affairs.

Bearing in mind the above, the authors will first clarify some concepts related to internationalisation.

1. Internationalisation and globalisation

Both terms are widely used in today's world. On many occasions, they are interchangeable. It is argued here that theoretically the two concepts are different in meaning and usage. Generally speaking, internationalisation refers to relations between nations or regions, which are only part of the world. On the other hand, the term globalisation indicates that the planet is considered as a whole. From this viewpoint, all human beings are living in a global village, and they are aiming for a common goal for society. The authors maintain that for a long time to come, internationalisation will play an important role in international affairs. Internationalisation occurs against a background of globalisation, while globalisation is the final result of internationalisation and will be achieved gradually.

2. Internationalisation and westernisation

In the past hundred years, the industrial revolution has resulted in great economic, scientific and technological progress in western countries. However, it has proved unwise for other countries to copy western practices and to evaluate everything by western criteria. Therefore, internationalisation is not equivalent to westernisation, much less to westernised standardisation. Every country follows its own path to internationalisation. As Samuel P. Huntington, an American scholar, has pointed out, considerable cultural differences may exist between regions, racial communities or social classes, and even inside a nation. Therefore, the western ideal of a developed society may not be able to serve as a model for a modern Islamic society or an African, Confucian or Hindu society. Nowadays, many non-western societies are trying to evaluate themselves with western standards and then develop what they lack. The time seems ripe for change with regard to such an unwise approach.

3. *Internationalisation and diversification*

Because of differences in history, culture, political system and economic situation, national interests and problems vary from country to country. Even western countries have each developed differently. Therefore, it is necessary to consider the countries' specific characteristics and to aim at mutual development. Internationalisation does not mean simple standardisation, even less westernised standardisation. Internationalisation does not prevent diversification. On the contrary, it favours diversification and leads to mutual understanding. This is because what internationalisation emphasises is not the elimination of cultural differences but international exchange on an equal footing. It is thanks to the variety of cultures that the world is colourful.

4. *Internationalisation and "indigenisation"*

How is diversification realised in practice? The authors argue that the differences between countries lie in their indigenous characteristics. In other words, employing indigenous culture gives expression to diversification. This means two things. Firstly, that people should not copy other countries' practices in the process of internationalisation, because these practices are based on a particular country environment. Secondly, that transformation is necessary to turn foreign experience into our own. Some scholars call this process "grafting". The "branch" of foreign culture is "grafted" onto the "tree" of indigenous culture so that it can grow there. The process of being grafted and growing is the process of "indigenisation". Indigenous culture may have difficulty in developing without absorbing some foreign culture. On the other hand, foreign culture has difficulty in surviving without being assimilated. Only through indigenisation can foreign culture play a part. Only through indigenisation can internationalisation play its role, and only through internationalisation can an indigenous culture have better chances of surviving and developing. It should be noted that diversification is not necessarily indigenisation while indigenisation is definitely diversification. Both internationalisation and diversification are important elements for modernisation, but indigenisation is even more so. Internationalisation is indigenisation based on diversification.

III. Challenges Chinese universities face in the course of internationalisation

The conference on world higher education held in Paris in 1998 presented a clear classification of the challenges facing higher education in the world in the 21st century: directionality, quality and internationalisation. "Because of the

universality of knowledge, knowledge can only be deepened, developed and spread with the joint efforts of international academic organisations. This means the academic environment, schools and student organisations have deep-rooted international characteristics. The internationalisation of higher education is the goal of all academic institutions in the world". The authors argue that the statement that knowledge is universal can only be applied to the nature and the objectiveness of knowledge.

Knowledge can be divided into two categories: natural sciences and the humanities and social sciences. The former is objective and universal, but the latter is not. Social and cultural phenomena in the west are different from those in the east, i.e., the objects of study are different. Therefore there are differences concerning the deepening, development and spreading of this kind of knowledge. These differences will give rise to contradictions. Although internationalisation itself is theoretically neutral and fair, differences in resources and national power will lead to unfair results in practice. The combination of differences in national power with internationalisation inevitably results in unfair distribution of interests among countries in international affairs. This is what China has to face while internationalising its higher education system.

At the beginning of this new century, global innovations and social development are bringing about great and even revolutionary changes in the politics, the economy, the social systems, science and technology, and education systems of the world. Internationalisation and diversification have become two irreversible trends in contemporary social life. The internationalisation and diversification of higher education have become critical to educational success of a country. The gradual strengthening of these trends will have far-reaching influences on China's higher education system. For China, a country in the process of carrying out reforms, internationalisation is a challenge more than an opportunity, because internationalisation only provides an opportunity to participate in international competition rather than eliminate competition. Internationalisation makes the competition between national powers even more intense, more inclusive and broader in scale. China is faced with a special challenge in the course of the internationalisation of its higher education system.

1. More intense competition for qualified personnel

The main theme of the 21st century is development. There will be intense competition for economic development. Human resources will certainly be a decisive factor. Universities train highly qualified people with specialised knowledge and skills, who work at first for their own country and contribute to

its development in politics, economy and science. With internationalisation, the relations between countries are strengthened, and the mobility of skilled graduates is accelerated. When everyone is free to move, they will surely choose an environment that is best for their own personal development. Internationalisation itself does not cause competition for qualified personnel. Such competition results rather from economic or technological factors. However, it may accelerate competition, because internationalisation breaks down the barriers against international exchange. This means that in the competition for qualified people, countries that offer better conditions have an advantage over developing countries. As a result, there is a "brain drain" from the latter to the former. According to statistics, students in the world totalled 1.5 million during 1994-95, 81.4% of whom studied in developed countries or regions. UNESCO statistics show that over the last decade the number of students was about 1.2 million, including no less than 750 000 students from developing countries. According to *A Report on the Development of Manpower in 1992* provided by the Bureau of Development and Planning of the United Nations, by the year 1987 one third of African people with specialised skills moved, mainly to European countries. From 1985 to 1990, as many as 60 000 middle or high-level administrative African workers left their own countries. These examples reveal that unfair exchanges do exist in the course of internationalisation of higher education. Apparently, the brain drain is detrimental to the development of developing countries.

China is a developing country, and also one of the countries where brain drain is a very serious problem. No doubt the loss of educated people has seriously affected China's higher education and its modernisation, which urgently needs qualified personnel. The immediate result is the scarcity of qualified workers and the ageing of highly qualified personnel. Statistics show that in 1997, 88% of the supervisors of doctoral candidates in the universities directly under the State Education Department were over 56 years old, and that the average age of the 29 academicians of CAS was over 70. The situation is deteriorating with the strengthening of internationalisation. There is data showing that the brain drain is spreading from higher educational institutions to secondary or elementary schools. The education of foreign students has turned into a competition for qualified people. In the past fifty years, most Chinese students studying abroad were financially supported by the Chinese government. The situation is changing now. Not only the number of Chinese students studying abroad is dramatically increasing, but more and more students who went abroad in recent years were financially independent rather than reliant on the government. More and more undergraduates, and even secondary or elementary school students are studying abroad, while previously only graduate students did. Clearly, these students enjoy more freedom in choosing to return home or to stay abroad after finishing their studies. As far as the competition for manpower is concerned,

China has three main disadvantages. Firstly, educated people are constantly leaving the country. Secondly, few of these people want to return. Lastly, it is hard to attract foreign-educated persons. It should be realised that the brain drain is unavoidable in the course of internationalisation. Nevertheless, the Chinese higher education system has long been subject to the central planning economic system, so it has many problems that prevent China from actively competing with foreign countries and that put China in an even more unfavourable situation in the competition for educated people. This is the n° 1 challenge China has to face while internationalising its higher education.

2. *More serious cultural conflicts*

Another issue Chinese universities have to consider is how to preserve and develop traditional Chinese culture, and how to absorb and make use of foreign culture in the course of internationalisation, that is, how to move from internationalisation to localisation. By their very nature, it is probable that universities will meet with cultural conflicts and challenges in the course of internationalisation. This reflects the conflict of the inner logic of the mission of universities with the flexibility demanded by internationalisation. Cultural conflicts result from cultural differences. Internationalisation will definitely lead to the introduction of foreign culture. With technological progress, western culture is rapidly spreading to all parts the world. This culture and local cultures originated in different environments and thus include different values and have different philosophical bases. There are sure to be divergences when they interact. If the right attitude is not adopted towards the proper way to deal with the contradiction, the traditional values and systems that are still of use today may be destroyed.

A nation needs to preserve and develop its culture, since this provides both the cohesive force and the enterprising spirit of a nation, originating from its people's identification with its culture, their sense of belonging to the culture and their sense of pride in it. If there are problems with, or psychological blockage to the heritage of national culture, the culture will inevitably fade or disappear. The transmission of culture is one of the basic tasks of education. The culture to be passed on includes not only the universal knowledge of humanity but also the valuable traditional culture of the nation. The purpose for doing this is not only to protect and extend the outstanding traditional Chinese culture but also to train modern Chinese people who feel responsible for their own nation as well as for the world. Chinese education must help the younger generation identify with, or feel rooted in Chinese culture. This is a task for education and a base for civilisation to exist upon and develop from. Simply copying foreign concepts or values and neglecting national culture is

tantamount to ignoring the duty of education and will have a negative effect on it. Chinese universities, which are carrying out reforms, need to be careful. While pursuing educational innovation, they should try to preserve their traditional culture.

3. *More intense competition for knowledge*

In the early 1990s, the "knowledge gap" between developed and undeveloped countries began to attract the attention of some international organisations. In 1990, a report entitled *Challenges for the South* by the Southern Committee first pointed out that a knowledge gap existed between the South and the North. "In the past the South had brilliant culture and was rich in scientific ideas. However, a lot of new knowledge is first acquired by the northern developed countries nowadays." "If the South fails to take advantage of modern technology, it will not have the chance to realise its wish for developing itself or for participating in the maintenance of the global relations of co-existence." The authors argue that the knowledge gap may affect and even determine a country's ability to participate in the internationalisation. Modern scientific discoveries and even advances in social studies and the humanities have mainly originated in developed countries. In a sense, this kind of knowledge deals with issues which concern developed countries. It is presented, studied and summarised with reference to the culture of developed countries. It takes time to apply such knowledge to developing countries. The time differential implies that developing countries can only follow rather than precede developed ones. Since knowledge originates in the cultural environment of developed countries, problems arise concerning its adaptability and how to make use of it when transplanted into a different environment. Because of the knowledge gap, developing countries lack the ability to accept new knowledge, including systems, ideas and values into which history, politics, economy, science and technology, and culture are synthesised. This inability eventually affects their participation in internationalisation. For this reason, the current competition for talented people and cultural conflicts are closely related to the knowledge gap. The knowledge gap is one very important reason for the brain drain from developing countries to developed ones. Many are seeking shortcuts to the latest knowledge, and these can only be found in developed countries, where conditions for progress are better. Generally up to now, only material and political reasons for the brain drain have been advanced. Yet for really talented people, the knowledge gap is the most important factor considered.

It should be noted that although the development of information technology facilitates internationalisation, the competition for knowledge is more intense. This is because both information technology and internationalisation are based

on knowledge. Without the base of knowledge, both information technology and internationalisation will be hindered. Knowledge and technology are needed to spread and apply information and networking technology. Financial support is of even greater importance, which is also lacking in developing countries. Take the case of the development of information technology in education in the United States. It was reported in *Newsweek* in the United States, that in 1996 there were 15 400 000 North American families connected to the Internet, while in the rest of the world there were only 2 340 families connected. During that year, 65% of the secondary and elementary schools in the United States were also connected to the Internet. A new act on telecommunications approved by the Congress stated that the United States would annually spend USD 2.25 billion in subsidising access to the Internet in secondary and elementary schools and libraries. In October 1996, President Clinton promised to spend USD 500 million in five years to improve the electronic communications in 100 universities and state laboratories in the United States. In 1997, some American universities spent USD 50 million to establish a new international Internet. A survey on the use of computers at 650 American universities revealed that, in 1996, 27% of the university courses were conducted in classrooms equipped with computers; 25% had made use of e-mail for the purpose of instruction and 15% had taken advantage of computer simulations and learning methods. Commercial course software, multimedia technology and CD-ROM's were used in university courses to the extent of 18%, 12% and 8%, respectively. Higher education is expensive and no other country seems able to compete with the United States, at least in the fields of in the fields of information technology and finance.

China is a large developing nation with a fairly unsatisfactory economic and educational situation. The higher education system in China is also faced with many problems caused by the knowledge gap. In China in 1992, there were 13 teachers of all levels per thousand of the population, while the average number for developed countries was 24. During the same year, funding available for public education in China was around USD 10 billion while the corresponding amounts for the United States and the developed western countries were USD 315 billion and in the range of USD 15/70 billion respectively. The share of GNP spent on education is over 5% for developed countries – even over 7% for some countries – but only 2% for China. In most developed countries, public educational funding per person is more than USD 1 000, the highest being over 2 000. Even in moderately developed countries, 100 to 500 dollars are spent per person. Yet in China, the average amount spent per person is only USD 9.4. In developed countries, the gross university enrolment rate exceeds 30%. For some countries, it is no less than 50%. However, the rate is only 4% for China. The proportion of university graduates for every 100 000 residents is over 2 000 in developed countries,

5 486 in the United States, and 6 903 in Canada, but only 192 in China. The data above shows that great disparities in educational performance exist between China and developed countries. Such differences are unlikely to disappear in the near future.

The problem is that China must participate in international competition and co-operation, while being handicapped by the educational disadvantages discussed previously. We must thus eliminate, or at least reduce the disparities in education. This must be achieved by the spread and the application of knowledge, reflected by the establishment of new systems, institutional frameworks, new thinking and ideas.

IV. Recommendations and suggestions

How should the challenge of internationalisation be dealt with? In the long run, no route to development, autonomy and power can be separated from international systems. Therefore, we must meet the challenge and try to turn the process of educational reform into an opportunity or a driving force. Below are some suggestions about how to make the higher education system in China more flexible.

1. Open up more widely to the world and broaden our horizons

This means we should fully realise the importance of internationalisation. For various reasons, China has long been in a state of semi-isolation, resulting in the rigidity of the system and attitudes to internationalisation. The latter is not a simple isolated phenomenon. It needs a suitable environment and an inner driving force. Although China has been adopting a policy of reform and openness for twenty years, people still have difficulty in changing their ideas and their ways of thinking. This is because all reform is directed towards changing the previous situation, and because our choices are heavily influenced by traditional practices. The only way forward is to open our door more widely. We should know about the world as well as China. We should master the "game rules" of the world as well as those of China. Such a broad view is necessary if we want to participate in internationalisation. An important role for higher education in the world of the 21st century is to train people who have a sense of being world citizens. We need to have such wide horizons to be up to the task. There are two elements to this: academic horizons and ideological horizons. The former refers to a person's knowledge about his/her field or related subjects, academic exchanges and the co-operative research he/she is involved in. The latter refers more to a way of thinking. Those with wide ideological horizons

will take the whole of mankind into consideration instead of confining their attention to only one culture, one nation, one school or even one department. The original meaning of the world "university" is the study of the universe, so essentially a university should have a wide vision of the world.

2. Carry out educational reforms and improve the quality of our education

Internationalisation requires a certain environment. Compatible ways of thinking, proper institutional frameworks and reforms are indispensable to the mutual understanding of different cultures. University leaders need to adapt their universities to their environment and improve them. Universities, which have always been conservative institutions, must be reformed, for internationalisation will eventually be achieved through institutional changes or reforms. Internationalisation requires universities in China to provide more multi-cultural educational programs, which can be more conveniently shared by different universities, countries and even regions. However, traditional universities are unable to do this. Therefore, there is an urgent need for comprehensive educational reforms covering teaching content, institutional frameworks, systems and educational policies. Furthermore, we should try to ensure the quality of our education once reforms are under way. Our higher education institutions will have to be tested according to conventional international standards, and undergo external inspections and criticism. Our education can only stand up to intense international competition and be widely accepted if it is of good quality.

3. Improve the flexibility of our policies and increase exchanges

Internationalisation gives people the freedom to move to different places. This in turn means free exchange of knowledge and ideas. Recently, the numbers of interregional or international organisations, academies, conferences and co-operative plans have been rapidly increasing. This has been necessary to co-ordinate areas such as funding and the exchange of personnel or practices in higher education, especially in the adjustment of curricular structure and content, in the operation of the credit system, and in the mutual recognition of degrees. We must try to take part in such activities. We should realise that the economic or scientific achievements of western developed countries rely heavily on international exchange and that their universities have played an important role in this respect. In the course of modernisation, China is suffering from a severe scarcity of qualified people. Although China has a large population, it has few educated people. Therefore, we should try to attract

skilled people from abroad and accelerate the training of qualified personnel. We should make it more attractive to study and do research in China and thus make our universities more international and more competitive. For this purpose, we should increase the flexibility of our policies concerning the recognition of degrees, course content, etc. and provide favourable conditions and services of good quality so that we can keep up with the prevailing international standards. In addition, we should take advantage of international co-operative projects to eliminate the differences between China and developed countries in acquiring and applying knowledge. We should improve the institutional frameworks or mechanisms of our universities so as to increase international academic exchanges and thus promote the development and exchange of knowledge.

4. Be tolerant and open-minded

When Beijing university, the first modern university in China, was founded a hundred years ago, Cai Yuanpei, president of the university, put forward such guiding principles as "being academically free and all-embracing" to manage his university. A university is a place where different views are accepted and various ideas are generated. This is the very reason why universities, unlike other institutions, are always lively. With the internationalisation of education, academic freedom is extended beyond national borders. This means that we may be faced with completely different ideas and cultures at any time. When this happens, we should not completely deny, reject or eliminate cultures with values that are different from ours, though we may not be able to understand them and accept them immediately. As cultural centres, universities will inevitably be severely affected in the cultural conflicts. We should promote multi-cultural higher education and make it adaptable to all subjects instead of making it one topic. This does not mean eliminating cultural differences, but instead considering every culture to be a valuable resource.

To sum up, we should create an international environment that facilitates education in all countries. Universities should function as bridges between different cultures. As with any process or movement, internationalisation may not develop in a balanced manner, and its effect on individual developing countries cannot be generalised. However, on the whole, developing countries are faced with great challenges by internationalisation because they are far weaker than the developed ones in terms of economic strength, competitiveness, and the ability to obtain and apply new knowledge. The Chinese government has on many occasions explicitly expressed its willingness to participate actively in internationalisation. At an international conference on higher education held by UNESCO in Paris in October 1998, Mr. Chen Zhili, the state

education minister of China, made the following promise in the name of the Chinese government: "We would like to continue our co-operation with UNESCO and to join the efforts of other countries to further promote the development of global higher education." Universities in China will actively meet the challenge of internationalisation, and they have the confidence to win.

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MODERN EDUCATION FROM A STRATEGIC VIEWPOINT AND OPTIMISATION OF THE ASSESSMENT SYSTEM

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ABSTRACT

The reform of higher education is an international issue. A successful reform and timely shift in educational strategy will help accelerate a nation's economic development and enhance national strength. In order to raise the educational and civic standards of the general population in the 21st century, higher education systems are being restructured on a global level. Methods of assessment to monitor the quality of education need to be continually renewed. As we are entering a new era of deepening reform and further opening-up as an integral element of the socialist modernisation, fresh substance needs to be infused into education assessment methods. Only in this way can we invigorate educational assessment in a new historical setting and help institutions of higher learning carry out their role more effectively and with higher standards.

I. Recent developments and strategic trends in educational transformation

1. "Agenda of the 21st Century" – Evolution in the management of higher education

In the past decade, the development of science and high technology has witnessed a trend of increasing cross-fertilisation. As advances have been made, overlapping and combination of various disciplines have been the norm rather than the exception. In this new age of scientific progress, cross-fertilisation has been the norm and dozens of nations have participated in this "Agenda of the 21st Century", facilitating the cross-fertilisation of knowledge generation and industrial production. Under such circumstances, it is difficult to achieve in-depth development of individual disciplines alone. Thus, higher education should abandon the single-discipline, narrow-focus approach and adopt the multi-discipline, broad-spectrum strategy. Educators' thinking should also shift from an analytical and deductive perspective to a synthetic and inductive perspective.

It is well known that the human factor in the progress of industrial production, science and technology has a more mental than physical aspect, especially in skilled applications of scientific knowledge. A wide-ranging public application of scientific knowledge is made possible only by education, which in turn is made possible by the support of the public and the government. This is particularly true of higher education. In the modern world, it is the cross-fertilisation or integration of science and technology, economy, and education that have determined the level of a nation's development. In a nutshell, the integration of science and technology, economy, and education has been the dominating trend on a global scale. Meanwhile, this trend has led to fundamental reforms in education systems, curriculum structures, content of courses, and methods of teaching. The continual cycle of restructuring and reform and its results has been enhancing national economic efficiency and social benefits.

2. Harmony between man and the environment and the combination of science and humanities teaching

Though scientific and technological progress has brought prosperity and material comfort to humanity, it has also made excessive use of natural resources and caused increasing destruction of the environment (pollution, diminished natural resources, more frequent natural disasters). At the same time we have witnessed widespread moral degeneration characterised by violence

and pornography. When the balance between man and the environment is disrupted, man is punished by nature. Since the 1970's the profound significance of the concept of harmony between man and the environment has been gradually rediscovered. "Return to nature" and "sustainable development" have been put on the agenda along with appeals for maintaining an ecological equilibrium, developing clean energy, promoting "green" projects, and practising family planning. At the same time, science and social science, long taught separately, are now integrated. Scientific and technological progress and the increase in material wealth alone will not cure many of the social ills mentioned above. Education not only has the function of promoting socio-economic progress but also serves to improve human morals and enable the acquisition of balanced character and all-round development. In this sense, the study of science with reason at its core and the study of humanities with an emphasis on the cultivation of culture and morality, when well blended, will greatly facilitate the building of a material as well as a spiritual civilisation. For a relatively long period of time, higher education institutions, especially those specialised in science and engineering, excessively emphasised the teaching of these subjects at the expense of the liberal arts, which resulted in a widespread low level of cultural achievement and a frequently unbalanced outlook in college students. Such a phenomenon has caused deep public concern and has been perceived by many to be a sign that colleges and universities must reform their methods of education and strengthen the cultivation of overall quality.

A look back over the last hundred years of Chinese higher education confirms the apparent trend from separation to integration. The shift from classic studies to modern science as the main subject of higher education was the prime force in the birth of new sciences and the progress of society. After this shift, however, the teaching of specialised courses and the narrowly focused disciplinary frameworks in tertiary education gradually isolated natural sciences from humanities and the arts. In recent years, employers in most parts of the world have advocated reform of higher education as they have found that they need college graduates who are not only capable in their scientific field but also people with a wholesome personality, who are hard-working, co-operative, willing, and able to overcome difficulties. The Ministry of Education has therefore given directives for the improvement in teaching of culture, thus enhancing university students' overall quality. Methods of education should be reformed so that people will develop in intelligence, ability and overall quality in a humanist fashion.

3. *The age of information and transformation of modern education*

Since the first computer was invented, the development of information technology has been overwhelming. Modern electronic technology, computer technology, multi-media technology, and global network technology have had a tremendous influence on every sector of society. Great changes have taken place in social structures, industrial structures, patterns of production, lifestyles and ways of studying. The acquisition, processing and transmission of information play a pivotal role in different trades and professions. The same types of changes are also happening on a huge scale in every area of higher education, from the concept, content, systems, patterns, and means of education to the structure of curriculum and methods of teaching, driving the purpose of higher education into a totally new era.

- As far as the concept of education is concerned, the primary goal of traditional science education was to understand the world around us, hence the emphasis on filling students' minds with the largest possible amount of information. A student's head was considered to be a warehouse and, the more information it contained, the better. The modern concept of education, however, holds that a student can never retain all the knowledge learnt during his/her tertiary education. Human beings invented computers; yet a computer's powers of computation, its capacity to store information, create drawings, and generate sounds and images are so great that they are beyond comparison with similar human functions. Computer technology, therefore, is a must for all university students. Another new development is further education. For a long period it was generally accepted that tertiary education marked the end of the process of education. As a result, there were attempts to make the curriculum structure as self-contained and complete as possible, which was not totally in line with general social trends. Today, higher education and its specific goals are only considered one link in the chain of a life-long education. In the planning for education, curriculum structure and content of teaching, emphasis should be put on the synthetic nature of knowledge as a whole. The priority should be the mental development of students, the cultivation of ability, especially the cultivation of innovative spirit.

- With regard to content and methods of education, information science and technology should not only be required of science and engineering students but also of economics, management, humanities and social sciences students. Computer networks and

multi-media technology have become irreplaceable in teaching and research in higher education and an important way of using and providing resources and services beyond the walls of university communities (distance teaching and learning, distance diagnosis, etc.). Because of this, a widespread sharing of educational resources and co-operation among colleges and universities throughout the world is foreseeable.

- As for teaching methods, in addition to the dissemination of knowledge and cultivation of abilities that have been practised all along, the cultivation of overall personal quality must be strengthened. This new concept of education and quality is part of a whole approach to a general quality education geared to the new millennium. Thus, there should be a move away from the long-standing tendency to focus only on narrow fields of specialisation for utilitarian purposes to the detriment of cultural attainment.

II. An analysis of the guiding principles of the educational assessment system

Since 1996, the Ministry of Education has been implementing the assessment of key universities or those qualified for "Project 211" to select outstanding achievers in undergraduate education. "The Scheme for Assessment and Selection of Outstanding Universities for Undergraduate Education", after being redrafted seven times, is now a complete scientific assessment system. The assessment focuses on a university's teaching conditions, performance and results. The scheme is characterised by its emphasis on improvement and development through assessment. The process of assessment itself should be a process of reform and improvement. There are 11 criteria in the assessment system which include 51 sub-criteria, 20 core criteria (with 4 quantitative criteria) and 17 quantitative criteria. The criteria for assessment are applicable to the performance of several different departments: the office of the Party committee, the university president's office, academic affairs, student affairs, the scientific research department, the human resources department, the finance department, the logistics department, the student management department, the physical education department, the communist youth league committee, university archives, and the equipment department.

Below is my analysis of the core criteria of the assessment scheme, made from a modern education point of view. I will take a look at the new concepts of talent and quality in relation to (a) the developmental and self-adjusting functions of the criteria system and (b) the implementation of the assessment for involving universities' active participation and self-improvement.

1. *Purpose and participation attitude in assessment*

There is an abundance of experience in educational assessment conducted in many foreign countries, which may be used in our exploration of using this method for improving our higher education. Educational assessment can be an effective way for government at various levels to monitor the quality of tertiary education. Based on the current situation of higher education in China, undergraduate education is the mainstay and is comparable to undergraduate education in many other countries. The quality of education offered by many of our major universities is considered to be first class internationally. At the same time, problems in our undergraduate education must not be ignored: the four weaknesses singled out a few years ago – shortage of funding, weak leadership, inadequacy of faculties, and lack of enthusiasm in students for studying – have not been improved upon. Research is still emphasised to the detriment of teaching, disproportional importance is attached to postgraduate education at the expense of undergraduate education, and further external expansion is sought rather than internal upgrading. There is a widespread feeling that "The grass is less green in the east and more trees needed to be planted". Our purpose and attitude in participating in the assessment is that we should take this opportunity to summarise our experience, analyse our weaknesses and shortcomings, step up our pace of development, raise our awareness, and improve the quality of our education.

2. *Basis of assessment and analysis of the guiding functions of main core criteria*

The following expression shall be satisfied:

$(0D) \cap (\text{Core} \geq 16A) \cap (\text{Core} \leq 2C) \cap (\text{Non-core} \geq 25A) \cap (\text{Non-core} \leq 4C)$

Namely, a university, only when it meets all five conditions in the expression, can be described as one with outstanding undergraduate educational performance.

The guiding principle of university management and the implementation of teaching work

This criterion is the guiding principle for an institution of higher education in accomplishing its mission of training qualified personnel. It is first of all reflected in the university leadership's strong commitment to teaching as its central task. It encompasses areas such as the optimal positioning of a university, the establishment of a university's goal of fulfilling its training tasks,

the setting up of the university management framework, the adaptation of its academic programmes to the needs of society, and the facilitation of students' all-round development in accordance with the laws of education and human growth. Although this is not a quantitative criterion, it is one of a comprehensive nature. Its essence is reflected in almost all aspects of a university's work at all times; therefore, this criterion is the most relevant and has the strongest guiding function.

Teaching plans reflect general cultivation of qualified personnel and personal development

Those who are engaged in the planning of teaching in a university's academic affairs office know very well how difficult and complicated it could be to implement a revolutionary teaching plan. The reasons include the influence of different mentalities and misunderstandings, and unfavourable objective factors and limitations in marginal conditions. But in order to train qualified people better for the next century, an in-depth analysis of the planning of teaching must be undertaken. On the one hand, we must continue to stress the importance of teaching the basics, cultivating abilities, broadening fields of specialisation, and training in applied and diversified disciplines. On the other, we should intensify the moral, physical as well as cultural education of students so that they will acquire higher moral standards, a healthy character and a wholesome physique, together with the full development best suited to each individual. The criterion for teaching plans is obviously of a directive nature. The following areas are also assessed: the advantages of an organised curriculum, the co-ordination and integration of disciplines, the allocation of course hours and credits, and the restructuring of specialised academic courses.

It should be noted that, along with the development of higher education, a revolution has taken place in the way people acquire and use knowledge. The dividing line between the old-fashioned mode of education and modern education is this: the former only pays attention to the study and application of existing knowledge, while the latter promotes the ability to explore and open up new areas of knowledge. As a result, the following viewpoints should serve as guidelines in the dissemination of knowledge:

- With the exponential increase in the accumulation of knowledge, the accelerating diversification of knowledge and vast increase of new courses, it is almost impossible for students to keep up with the pace. The solution to this problem is to set up a new curriculum structure where tasks are prioritised in a scientific way.

- The appearance of computers is a major advance in modern education. The power of computers are taking on the traditional tedious human labour of calculation, memorisation and drafting of drawings and tables. A decision should be made as to what should be taught or to bypass and how much training to offer in CAI and in CAD methods so that there will be sufficient provision of basic computer skills to meet the needs of society.

- In the teaching of specialised knowledge, efforts should be made to keep up with the latest developments in various fields. It is generally recognised that, the more specialised the knowledge, the more likely it is to become out-dated in a relatively short period of time. In this light, special subjects should be set up according to the principle of "being focused, up-to-date and flexible".

- As students of the 21st century should be trained to be people with outstanding general quality, actual teaching time must be organised correspondingly in order to reach this goal. To facilitate students' culture, an inspiring campus atmosphere should be combined with co-ordinated classroom teaching and extracurricular activities.

- To be in line with the periodic nature of undergraduate education within the whole process of further education, any raising or lowering of the level of the content of teaching would be impractical.

Planning, implementation and results of reform in teaching content and curriculum structure

This core criterion is an important strategic measure in the reform of university teaching, which sets practical requirements for the reform of China's higher education in terms of content and results. The criterion requires that the top scholars, key instructors and administrators of an institution co-operate under a particular university policy to carry out the reform in a concerted, sustainable manner. The areas of assessment include the overall plans, the fulfilment of projects, the production of textbooks and course material, and the allocation of resources. It is a highly useful guideline.

Planning and implementation of faculty development

To reform teaching would become meaningless if we did not have high-quality faculties.

The development of a university's faculty is dependent on the advanced training of scholars, a fruitful environment for scientific research, instrumental practice, and the accumulation of teaching experience. As a result, a university plan for faculty development, a certain level of productivity in faculty research, and a satisfactory ratio of teachers with doctoral degrees are indispensable elements for assessment.

Unique characteristics in teaching

Even though it is the last one quoted in the "Scheme for Assessment and Selection of Outstanding Universities for Undergraduate Education", this criterion, because of its intrinsic value, tends to most actively mobilise the participating institutions and bring their own initiative and strengths into full play. While it is hard to quantify the elements, the criterion stresses quality and originality, and can be applied in a practical, generic and developmental way because of its self-adjustable and developing nature.

III. Conclusion

We should aim at an overall optimisation of education assessment from a long-term strategic point of view and guarantee the quality of undergraduate education as the main component of higher education. In order to fully achieve this objective, we should emphasize the key points of assessment criteria and downplay the process of assessment itself and the ratings of universities, look closely at areas such as faculty quality, student quality, and the management of teaching, but avoid excessive attention to trivial details. Only in this way will we be able to vigorously demonstrate the progressive modern concepts of macro-education, the cultivation of quality and talent, and to encourage different institutions of higher education to actively participate in the assessment of their undergraduate education.

THE ANALYSIS OF COLLEGE AND UNIVERSITY EMPLOYMENT COSTS IN CHINA

A CASE STUDY OF A MAJOR CHINESE UNIVERSITY

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ABSTRACT

To analyse the system of employment costs in colleges and universities, this article is a study of the employment costs of a certain university. The study shows that, since the wage reform based on the post allowance was introduced, university teachers are more satisfied, though there is still a discrepancy between the current wage and their expectations. In addition, the level of wages is not the only factor that affects teachers' morale. Whether the distribution system is fair or not also has an important impact on them.

I. Introduction

Colleges and universities, non-profit organisations, which aim to cultivate outstanding persons for the nation, have in the past been entirely funded by the government. Such a long-established concept has never taken cost into consideration. At the end of the 20th century, however, educational resources began to bear the brunt of the increasing demand for higher education and the limited funds of our government. Furthermore, new investors, especially students and their parents, who are now covering part of educational costs, are paying close attention to the use of educational resources. Both these reasons make it necessary to gradually strengthen cost consciousness and to improve the efficiency of using internal resources.

An important part of resources goes towards staff expenditure, which constitutes about 40% of colleges and universities' costs, and also in the average funds per student paid in China from 1993 to 1996 (Table 1). Therefore, staff expenditure is a key factor in the assessment of educational costs.

Table 1. Higher institution and average funds per student in China from 1993 to 1996

	1993		1994		1995		1996	
	Total funds	Average funds per student	Total funds	Average funds per student	Total funds	Average funds per student	Total funds	Average funds per student
Staff expenditure	58.2	2 293	92.5	3 305	100.9	3 473	115.4	3 819
Total expenditure	163.4	6 442	210.1	7 505	240.6	8 280	282.9	9 366
Rate	35.6%		44.0%		41.9%		40.8%	

Note: Unit of funds: hundred of million yuan; Unit of average funds per student: yuan.
Sources: Statistics of education funds in China in 1993 and 1994 and statistical annuals of education funds in China in 1996 and 1997.

In the past, the real cost of staff in colleges and universities could not be seen from the wage slip under the planned economy system because of the hidden

benefits: medical coverage and low priced housing. To look at education from an economic point of view, calculating the real cost of education by converting various pay and welfare benefits into money according to the current financial system does not only help to evaluate education costs accurately, but also to reflect staff expenditure more precisely so as to establish the idea of cost and benefit.

In addition, just as the President of Tsinghua University, Mei Yiqi, once said, "A university is based on great scholars, not buildings." The quality of staff is crucial to the development of a university, and is still even now an important norm in the evaluation of higher education institutions. Therefore, to some extent, the students' quality and academic development directly depends on the work and living conditions a university or college can provide for its staff.

Now, however, with the increase of employment in high-tech companies, the gap in salaries is widening, thus weakening the attraction of colleges and universities to persons with outstanding qualifications, most of whom have chosen to work for Chinese or foreign companies. Statistics of graduate distribution in universities show that the number of those who have been employed in colleges and universities was about 12.4% in 1998 and about 10.6% in 1999. Most colleges and universities have begun to take this into account and have introduced new measures to attract qualified staff. For example, since 1999, nine universities have increased staff wages to a new level by following the post allowance system, and the Guang Hua School of Management of Peking University budgeted CNY[1] 500 000 to invite skilled people from all over the world. Those steps brought hope that staff wages would improve generally, but although it was a breakthrough, they were seen as a reform of the old employment and wage system rather than part of a well thought out new one.

The cost of staff varies from one college and university to another among the 1 000 institutions in China due to differences in level, sources of funds, management system, district and so on. The method of computation, however, is the same in every university and staff share some ideas regarding the wage system. Consequently, this case study will be of great value for other colleges and universities to refer to.

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1. CNY = Renmimbi Yuan.

II. Purpose and method

This paper has three objectives:

- Compute the real wages in the university according to the current wage system, including monetary income (pay, allowance and
- premium) and non-monetary income (medical benefits, housing subsidy and pension), and study the relationship between cost and age, technical position and other personal characteristics of the staff.
- Estimate the reasonable staff cost in the university on the basis of the method of employment cost, labour market, the attitude of staff to the wage system and the current financial situation.
- Suggest some policies.

To attain the above objectives, we began to collect material. The first documents are various regulations and documents regarding the wage system, housing system and medical benefits in Chinese universities. The second is a financial report and the medical fare?, an investigation relating to the attitude of staff to wages and the distribution system of the university in question.

In order to find out the opinions of staff to current wages, we designed a set of questionnaires, including the following three elements but not including questions on their personal characteristics:

- Their attitudes to the wage and distribution system before the post allowance system: their income, the level of satisfaction, the reason for dissatisfaction, and their expected salary.
- Their attitudes to the wage and distribution system after the post allowance system: whether the present distribution, especially the post allowance system, is reasonable, if not, why not what the university should refer to when it distributes the salary.
- The motivating effect of wages: what is the most important factor for their positive attitude to work, why they choose their occupation, despite dissatisfaction with the salary.

On the basis of the method of storied random sampling, we chose 101 samples according to the different proportions in universities with staff from different departments, technical posts and professions, and sent the questionnaires out by post. Overall, 63 questionnaires were returned: a return rate of 62%.

III. Computation and analysis

1. The computation of staff cost

In terms of the financial system since 1998, staff costs mainly consisted of the following:

- A basic wage: including a standard wage, the subsidy that the state provides, such as duty wage, variable wage, tutor subsidy, wage supplement and living allowance.

- A complementary wage: including the allowance that is provided by our state, such as various post allowances, price subsidy, district subsidy, heating subsidy in winter, travel subsidy.

- Other wages: including allowances, subsidies and premiums other than the above, which also form part of the gross wage, such as the premium for teaching.

- Employee services and benefits: prescribed by the state, including welfare benefits for staff such as union funds, staff welfare benefits, subsidies for health, subsidies for single child, medical care expenses and expenditure for those who are injured at work.

- Social security: including various outlays for social security, such as endowment insurance, unemployment insurance, medical insurance and housing accumulation funds.

To report staff costs more accurately, we have translated material gains into financial gains. The first one is a housing allowance. In recent years, universities have taken several measures for different types of reform throughout the country. For example, 66% of the standard wage subsidises the deposit on housing for new staff that have been employed since 1999. For other members of staff, relevant compensatory approaches have been carried out. Furthermore, some staff have bought their houses, others have been renting

them. So, in order to compute conveniently, we assume all staff rent their accommodation from the university.

In addition, because land is freely allotted by the state and because we assume the university does not make a profit from renting its houses, we only need to calculate the cost. Generally, the economic lifetime of a property is about 100 years; here, however, because we are dealing with the exceptional case of universities, we presume it to be around 50 years, so the rate for depreciation is 2%. Therefore, we can use the following formula:

> The subsidy for housing in the university = the average housing area for staff
>
> * (The cost / 100) * (1 – the age of houses * 2%)
>
> Annotation: the rent = the cost of the house * 1%.

As far as medical care is concerned, referring to the total expenditure for medicine in the university and the disease incidence of staff at different ages, we add the expense to staff salaries.

In the past two years, the gross expenditure for teachers is far ahead of other staff. Researchers come second. Compared with 1998, total expenditure has increased, especially on teachers and researchers (Figure 1). Besides, the average income of staff and the income-increasing ratio of different departments show the same regularity with the total expenditure of different departments. That is, teachers and researchers have the highest income while service staff have the lowest.

Compared with 1998 incomes, professors and associate professors received about 26% more in 1999, the growth rate for lecturers is 24%, while it is not evident for assistant lecturers, which suggests that teachers higher up the hierarchy profit more from the existing wage system (Figure 2).

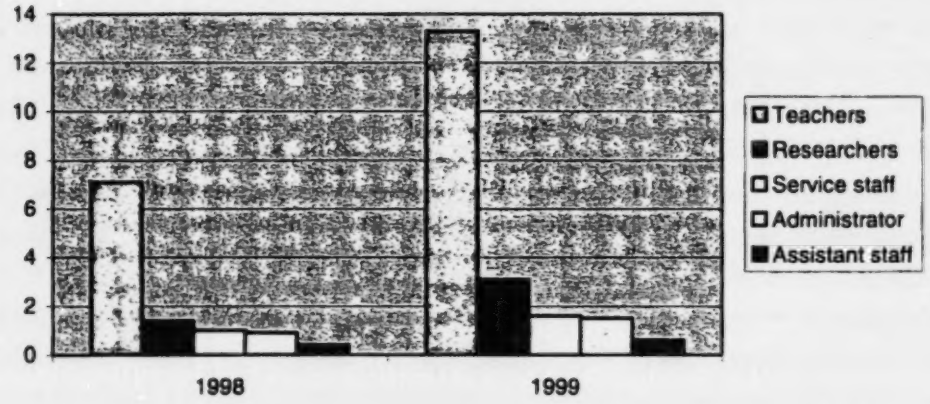
The disparity of income is quite noticeable in different professions.

Teachers from general engineering professions can earn up to 1.8 times more than those from schools of humanities and social science, and teachers from schools of economics and management or from information science and technology can even earn 2.5 times more.

2. *Opinion regarding the wage system before the post allowance*

We can see from the survey how much the standard wage is before income tax is deducted, a salary that includes the state wage, college allowance, premium, service fee and other income. Each wage is found rather low, about 55.6% average less than CNY 1 500 and 28.6% between CNY 1 500 and 2 000. Otherwise, the standard deviation is not more than 1.2, that is, the difference in the samples is unremarkable (Table 2).

Figure 1. **Relative proportion of expenditure for various staff**
(based on staff in 1998)



Source: data from the University Financial Department.

Figure 2. **Relative income of staff with various**
(assistant professor in 1998 = 1)

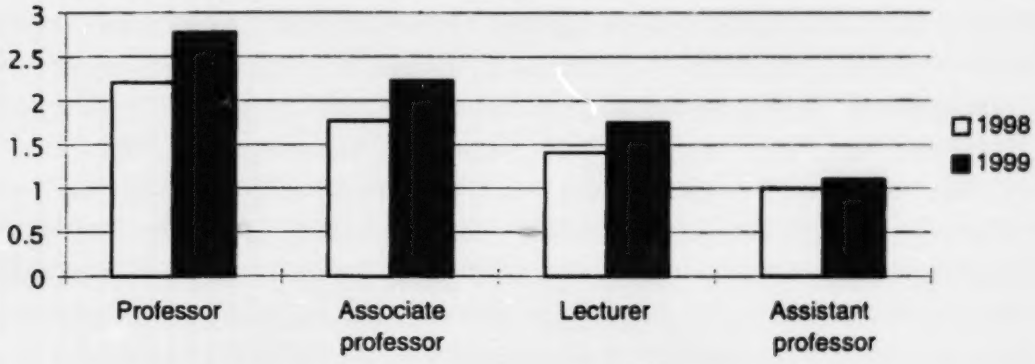


Table 2. **Basic salary and income expectation**

Basic salary		Income expectation	
Yuan	Percentage	Yuan	Percentage
<1 500	55.6	2 000-3 000	9.5
1 500-2 000	28.6	3 000-5 000	58.7
>2 000	15.8	>5 000	31.7

On the basis of their output, family requirements and other factors, university staff put forward their expected income. 31.7% of staff consider CNY 5 000 per month acceptable, 58.7% expect between CNY 3 000 and 5 000, 9.5% between CNY 2 000 and 3 000. Therefore the expected average monthly income lies between CNY 4 500 and 5 000, which is about twice as much as wages before the post allowance.

As far as the relationship between personal characteristics and income is concerned, we found that wages were related to position, either technical or administrative, and educational background, but not to age and gender. In addition, staff length of employment is a correlative factor too. The extent of correlation suggests that the former distribution system is closely correlative with their technical and administrative post, and indirectly with their educational background and length of employment (Table 3).

Table 3. **Analysis correlation between personal characteristics and income, and expected income**

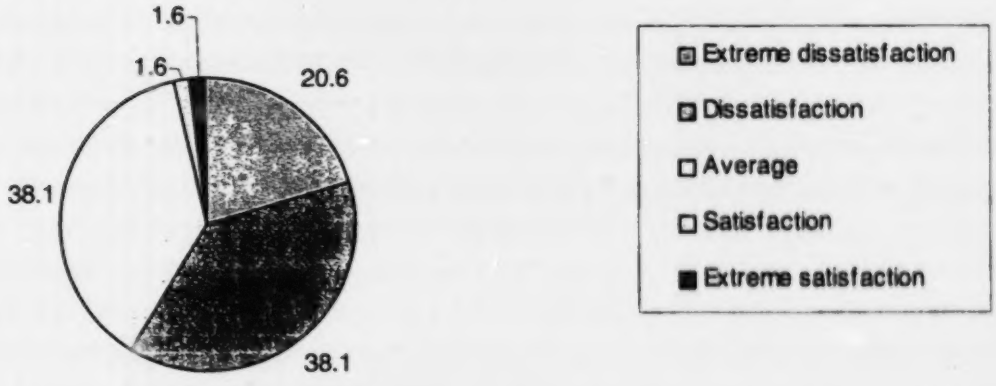
	State wage	College allowance	Premium	Other income	Part-time job	Gross income	Expected income
Technical post	0.362**	0.368**	0.401**	0.159	0.086	0.447**	0.234
Administrative post	0.189	0.494**	0.224	0.099	0.293	0.406**	0.268
Education background	0.03	0.344*	0.178	0.046	0.036	0.193	0.493**
Age	0.176	0	0.275	0.353	0.358	0.185	0.029
Sex	0.187	0.108	0.115	0.008	0.189	0.259	0.165
Working age	0.121	0.154	0.302	0.377	0.224	0.299*	0.06

Notes:
* Correlation between two variable, significance level: 5%.
** Correlation between two variable, significance level: 1%.

The expected income correlate at the significant level with educational background, but not with technical and administrative post. Generally, the better the education background, the higher the expected income, which corresponds with the method in economics of education (Table 3).

About 20.6% of staff, feel extremely dissatisfied with their present income, 38.1% are dissatisfied, and about 1.6% are satisfied or very satisfied (Figure 3).

Figure 3. **Percentage of dissatisfaction/satisfaction**

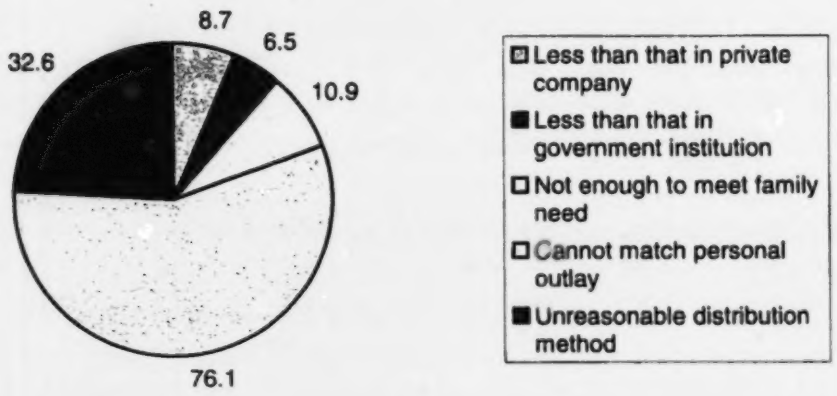


76.1% of them considered that their income did not match up with their devotion, which was the reason for their dissatisfaction. 32.6% of them said the distribution system was unreasonable, 10.9% said their income could not meet family needs (Figure 4). From these answers, we found staff pay more attention to the inner equity than outer one.

Compared with their devotion to work, 28.6% of them think their income is extremely low, 58.7% think it is rather low and none of them consider it sufficient.

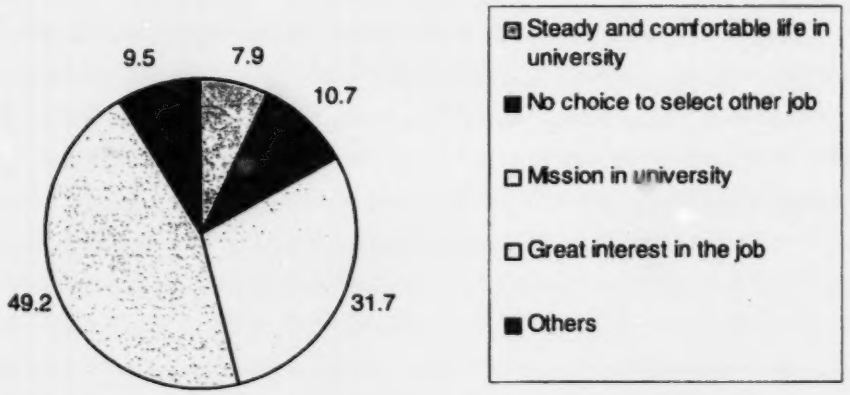
Compared with those who have the same educational background and are employed in other fields, 41.3% of staff think their income is far lower, 31.7% slightly less and 20.6% about the same. From the above, we found that there existed the "outer" inequity of wage in university. But we have to consider the compensations, that is, the many advantages in a university, such as a pleasant working environment or a flexible schedule. To some extent, we believe that this explains the moderate difference.

Figure 4. **Reasons for dissatisfaction**
(as a percentage)



Although staff feel dissatisfied with their income (49.2%), most would rather work in a university than another field, because they enjoy their jobs. 31.7% think it is the university mission that attracts them. Only 7.9% take the job because of the comfortable life or because they have no other choice (Figure 5).

Figure 5. **Reasons not to change job**
(as a percentage)



According to the theory of human development, whether an organisation can attract highly skilled persons mostly depends on its reward system. Generally, the equity of organisational reward includes two parts. One is the "outer" equity; the other is the "inner" equity, that is, whether staff will receive the same salary as other people who take the same job in other organisations and in the same field. Any inequity will lead to serious problems. For example, if treated unfairly, employees may even leave their positions, which will generally harm to the organisation. Of the two equities, the inner one is more important, simply because it is easier to find out information about the inner reward.

Is the distribution system reasonable? 58.8% answered yes, 33.3% answered no, 7.9% think it extremely unreasonable. Moreover, there is a strong correlation between answers and technical and administrative post, or length of employment, but not with other personal characteristics. In other words, the higher the technical and administrative post, the more reasonable he/she thinks the system is.

Why is it unreasonable? 65.1% believe they do the same work without the same money which indicates the importance of equity in the distribution system.

The results of the survey suggest that technical post is an important influencing factor on one's income. As far as the difference caused by technical post, half of those staff consider it appropriate, 28.6% think it too wide and should be reduced, 19% hold the opposite opinion.

More people have a positive view of the differences brought out by profession. Supply and demand in the market, in terms of the economics of labour, may be reflected by the reward that is, when supply surpasses demand in some fields, the labour price will increase. In the opposite situation, the price will decrease. 65.1% think these variations are a natural result of the labour market, but 33.3% suggest they should be balanced.

3. Attitudes to the wage system after the post allowance was introduced

Since the autumn of 1999, the state has increased investment in higher education, and the previous wage system in several universities has been reviewed with the introduction of post allowance. This has had a great impact on society and also on staff. After the reform, the proportion of staff that thought it reasonable or rather reasonable increased from 15.9% to 38.1%, those that held the opposite opinion decreased from 41.2% to 22.7%. Equity, however, is questioned by staff with the increase in wage disparities. We found that 3.7% considered them to be unreasonable, and 19% rather unreasonable.

The study shows that there is a correlation between the technicality of the post and the allowance attributed. That is, the higher technical positions are more highly valued than the lower ones. Furthermore, there is a correlation between administrative position and educational background, but no link with age and gender.

Whether the distribution system is reasonable and accepted is the key to motivating staff. In this study, we found that 39 members of staff (about 61.9%) thought that the distribution should depend on one's achievement in teaching and research. Thirteen members of staff (about 20.6%) suggested all technical and administrative posts should base distribution on educational background. Seventeen members of staff (about 27%) were in favour of balancing it out (Figure 6).

An effective reward program is divided into three parts: a direct economic reward, an indirect economic reward and a non-economic reward. To remain competitive, an organisation has to pay remunerate certain activities, which is a crucial factor to its effectiveness, and therefore the organisation should take into consideration staffs' characteristics. The most important reward for those who have to meet their family' needs is money, but some people are able to work for a long time just for their own pleasure. To a great extent, the reasonable reward theory depends on the recipient's attitude.

How do university staff feel rewarded? What are the most important attractions of university life? 41.3% of staff think it is important that the employment mechanism is fair, 38.1% consider the working environment an essential element including human relationships, 34.9% are motivated by income and 20.6% by housing facilities (Figure 7). Therefore income is not the most effective motivating factor for most staff.

The low pay leads to a decrease in the quality of university staff. Some measures have been taken to solve this problem. For example, highly qualified people are employed with CNY 100 000 annually in the "Long River Scholar" program; the pay was even higher in the Management College of Beijing University last year. 42.9% of staff think it is a good idea to attract talents, 17.5% however, suggest it will contribute to an unfair distribution of wages between members of staff.

When we see why staff choose to work in higher education, we can see how the income appeals to skilled people. 47.5% say they enjoy their work, 31.2% appreciate the regularity of life in universities, 22.9% suggest there are more opportunities to develop and to realise their potential. Only 6.6% work in higher

education for the income (Figure 8). We can therefore conclude that the attractiveness of working in higher education is due to the job of teaching itself.

Figure 6. **Preferred norm for reward distribution**
(as a percentage)

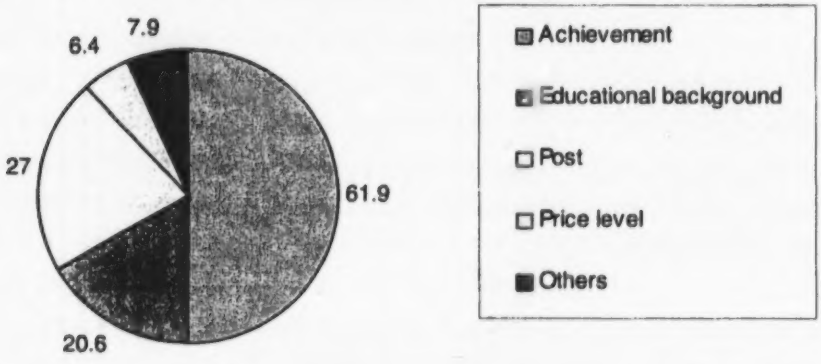
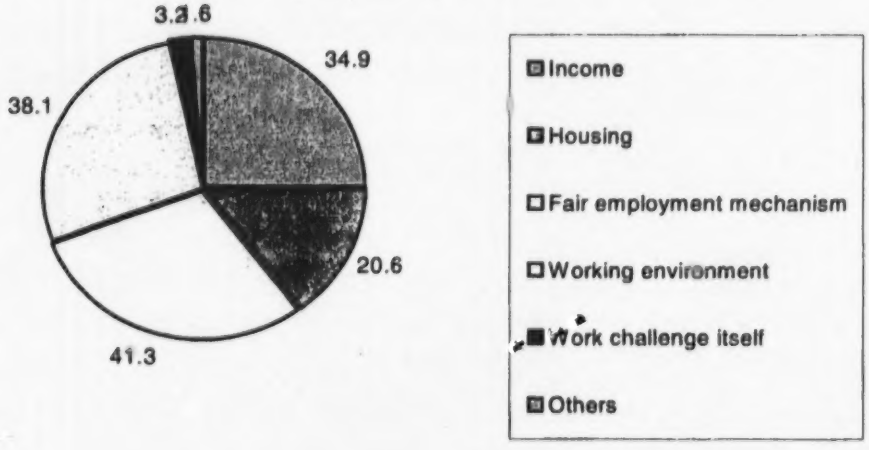


Figure 7. **Motivation factors**
(as a percentage)

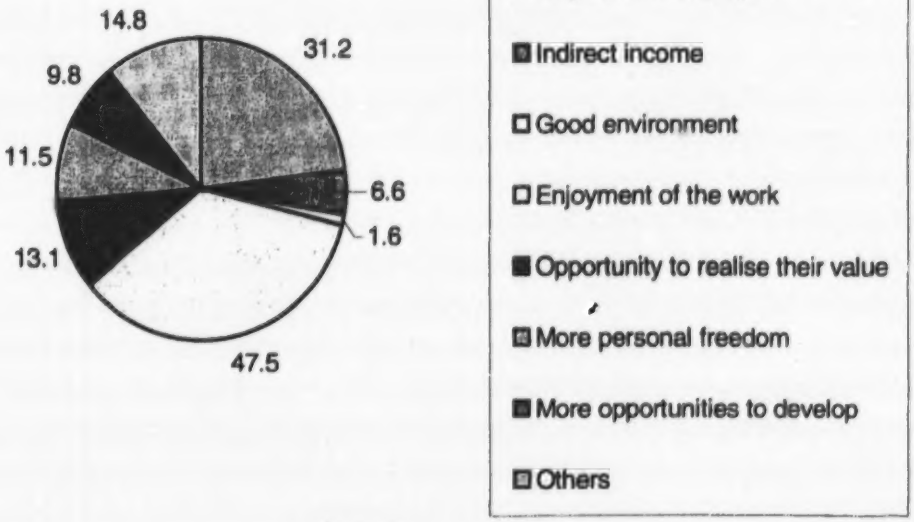


IV. Conclusion

We can draw the following conclusions from the analyses of employment costs in universities.

Firstly, university wages should be increased. The structure of expenditure on staff tends to be reasonable and personal income is increasing, especially that of the majority, teachers and researchers, whose salaries are increasing more rapidly. But it is evident that most people, especially young people, are dissatisfied with their comparatively low income, mainly because they feel their reward is not equal to their devotion to the job and other staff rewards within the organisation. Their social status is improving with the development of technology in colleges and universities, which is an opportunity, but also a challenge for universities. The income from scientific research funds is so much more than the total expenditure on staff that to make full use of its resource advantage, forming a close relationship with society is an efficient way for universities and colleges to gather social funds and increase staff wages.

Figure 8. **Reason to select this occupation**
(as a percentage)



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Secondly, it is a multiphase problem and to introduce competition between members of staff in universities. The post allowance system played a significant role last year, and was not only a breakthrough from the old distribution system, but an effective approach to improve staff income. The results also suggest there is still some resistance from staff, who deem it unfair to do the same job for a different wage. This is a natural reaction to a reform to which it will take some time to adjust. It is also an indication that the new system needs to be digested in practice. In universities, building a free and harmonious atmosphere will be conducive to teamwork. On the other hand, most staff approved the disparity with other professions, which suggests that this conforms to the economic principle of increasing the differences between members of staff.

Finally, regarding human development, the crucial motivating factor is not salary, but the job itself, and the equity of the employment structure in universities. In addition, our study reveals that staff pay more attention to the latter than to the level of wages. Universities should therefore pay attention to both the spiritual and material needs of their staff. This is the current challenge facing the reform of the wage system.

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